UNIVERSIDADE FEDERAL DE MINAS GERAIS

Programa de Pós-Graduação em Neurociências

COMPARAÇÃO DAS CARACTERÍSTICAS DAS CEFALEIAS PRIMÁRIAS NA COMUNIDADE COM AS DE UM CENTRO TERCIÁRIO DE ATENDIMENTO

ARIOVALDO ALBERTO DA SILVA JÚNIOR

Belo Horizonte - MG

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Tese apresentada à Coordenação do Programa de Pós–Graduação em Neurociências do Instituto de Ciências Biológicas da Universidade Federal de Minas Gerais (UFMG), como pré-requisito para obtenção do título de Doutor em Neurociências.

Área de concentração: Neurociências clínica.

Orientador: Professor Antônio Lúcio Teixeira Júnior.
Universidade Federal de Minas Gerais.

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Ata da Sessão Pública de defesa de Tese de Ariovaldo Alberto da Silva Júnior, *no. de registro 2009751358* aluno do Programa de Pós-Graduação em Neurociências do Instituto de Ciências Biológicas da Universidade Federal de Minas Gerais. Aos dezesseis dias do mês de dezembro do ano de dois mil e onze, às duas horas, na sala Prof. Nello Moura Rangel, bloco K, sala 163, do Instituto de Ciências Biológicas da Universidade Federal de Minas Gerais, realizou-se a sessão pública da defesa de tese de Ariovaldo Alberto da Silva Júnior, intitulada **"Comparação das caracteristicas das cefaléias primárias na comunidade com as de um centro terciário de atendimento".** A Banca Examinadora, aprovada pelo Colegiado do Programa no dia 07/11/2011, foi constituída pelos professores: Antônio Lúcio Teixeira Júnior – Faculdade de Medicina - UFMG (orientador); Arthur Kummer – Faculdade de Medicina – UFMG; Daniel Ciampi de Andrade – Faculdade de Medicina – USP; Mauro Eduardo Jurno – Faculdade de Medicina de Barbacena - FUNJOB; Renan Barros Domingues – Faculdade de Medicina / EMESCAN – ES. A defesa constou da apresentação de seminário versando sobre o assunto da tese, seguida de argüição do candidato pelos membros da banca. Posteriormente, a banca examinadora reuniu-se em sala fechada para o julgamento final, tendo sido considerada APROVADA a tese de Ariovaldo Alberto da Silva Júnior. O resultado foi comunicado ao público presente pelo Prof. Antônio Lúcio Teixeira Júnior, que, em seguida, declarou encerrada a sessão. Nada mais havendo a tratar, eu, Vanessa Aparecida de Oliveira Bastos, lavrei a presente Ata que dato e assino após a assinatura dos membros da Banca Examinadora. Belo Horizonte, 16 de dezembro de 2011.

Prof. Dr. Antônio Lúcio Teixeira Júnior (orientador) _____

Prof. Dr. Arthur Kummer _____

Dr. Daniel Ciampi de Andrade _____

Prof. Dr. Mauro Eduardo Jurno _____

Prof. Dr. Renan Barros Domingues _____

Vanessa Ap Oliveira Bastos (Secretária auxiliar) _____

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Kênia de Oliveira Bueno (representante discente)

Às pessoas que sofrem com dor crônica,
espero que este estudo ajude-as nessa passagem.

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Ao meu orientador, Prof. Antônio Lúcio Teixeira, que foi decisivo na minha trajetória como pesquisador e docente. Sua virtuose, espírito de colaboração e caráter fizeram toda a diferença no meu processo de mudança e amadurecimento. Agradeço sua disponibilidade e orientação firme.

À população do Município de Capela Nova, sempre cordial e disponível na participação da pesquisa. À Secretaria de Saúde e ao Programa de Saúde da Família do Município, pelo apoio irrestrito, especialmente à Odélia Maria de Paula e ao José Geraldo da Cruz, colaboradores ativos em toda a coleta de dados.

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À Pós-graduação em Neurociências da UFMG; o acolhimento dos colegas de diversas disciplinas permitiu a ampliação da consciência com sua intensa interdisciplinaridade, bem representada pela nossa coordenadora, Dr^{a}. Ângela Maria Ribeiro.

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“Faça com que seus pensamentos o libertem, não o contrário”.

(autor desconhecido).

RESUMO

Introdução: Os estudos epidemiológicos sobre cefaleias primárias geralmente são conduzidos em duas condições muito distintas, na comunidade e em centros especializados de atendimento. A visão integrada desses cenários poderia contribuir para o melhor enfretamento da questão. **Objetivos:** comparar as características clínico-epidemiológicas das cefaleias na comunidade em relação a um centro terciário. **Métodos:** todos os habitantes de Capela Nova-MG foram entrevistados por agentes do Programa de Saúde da Família (PSF). Os indivíduos identificados com cefaleia crônica diária (CCD) foram convidados para avaliação neurológica, odontológica e fisioterápica. Os moradores de uma microrregião censitária da cidade, escolhida por sorteio para compor uma amostra, foram convidados para avaliação neurológica independentemente da frequência de cefaleia. No Ambulatório de Cefaleias da Universidade Federal de Minas Gerais (AmbCef-UFMG), foram avaliados os pacientes atendidos consecutivamente em quatro meses. Os casos de CCD seguiram o mesmo procedimento, com avaliação multiprofissional. O diagnóstico das cefaleias seguiu critérios da Classificação Internacional das Cefaleias-2004 e o das disfunções têmporo-mandibulares (DTM) do *Reseach Diagnostic Criteria* (RDC). **Resultados:** foram avaliados 1.605 moradores, 1.050 tinham cefaleia (65,4%) e 57 tinham CCD (3,6%). A amostra teve 258 moradores. A prevalência de migrânea e cefaleia do tipo tensional nessa amostra foi, respectivamente, de 18,2 e 22,9%. As frequências dessas cefaleias entre os 76 indivíduos da amostra foram de 61,8 e 77,6%, enquanto entre os 289 pacientes do AmbCef foram de 79,8 e 20,4%. As prevalências de disfunção têmporo-mandibular (DTM) na CCD foi, respectivamente, de 58,1% e de 80% na comunidade e no AmbCef-UFMG (p=0,07). As mulheres na faixa dos 40 anos foram as mais acometidas. **Conclusão:** as cefaleias na comunidade mostraram taxas de prevalência e associações demográficas como as descritas na literatura. As frequências das cefaleias primárias mostraram-se diferentes na comunidade e no ambulatório, o que não aconteceu nos casos de CCD e de DTM.

Palavras-chave: Epidemiologia . Cefaleia crônica diária. Cefaleia do tipo tensional. Migrânea.

ABSTRACT

Comparison of primary headaches characteristics in the community and in a tertiary care clinic

Background: Epidemiological studies focusing on primary headaches are often difficult to compare, since they are sometimes conducted in the community and sometimes in the specialty care. Since target populations are different, comparing results may contribute to a better understanding on the headaches and on barriers to care. **Objectives:** To contrast the epidemiological characteristics of headache sufferers identified from the population and from specialty care. **Methods:** All inhabitants from Capela Nova – MG were interviewed by agents from the Family health Program (FHP). Those screened as having chronic daily headaches (CDH) were invited to participate in neurological, dental, and physiotherapy assessments. Additionally, those living in one of the city's micro-regions (chosen at random) were enrolled to participate in neurological assessment regardless of the headache frequency. Finally, all patients seen at the outpatient headache clinic of Universidade Federal de Minas Gerais (AMBCEF-UFMG) over a 4 months period were consecutively assessed by the same multidisciplinary team involved in the community research. Headaches were diagnosed according to the Second Edition of the International Classification of Headache Disorders (ICHD-2), and temporo-mandibular disorders (TMD) were classified as per the *Research Diagnostic Criteria* (RDC). **Results:** Of 1,605 inhabitants from the population, 1050 (65.4%) had headaches and 57 (3.6%) had CDH. The micro-region sample consisted of 258 inhabitants. Migraine happened in 18.2% of them, and tension-type headache (TTH) in 22.9%. Frequency of these headaches among 76 headache sufferers in the sample were respectively 61.8 and 77.6%. Finally, among headache sufferers in the outpatient clinic, 78.8% had migraine and 20.4% had TTH. In the population, prevalence of TMD in those with CDH was 58.1%, while in the clinic it was 80%. Women were more likely to suffer from headaches in all samples, but the proportion of men were higher in the community and lower in the population ($p<0.05$). **Conclusions:** Populational prevalence and demographic characteristics found in our study are aligned with what has been described. Relative frequency of migraine and TTH vary substantially in the community relative to the population, but the same was not true for CDH and TMD, suggesting that they may be more determined by neurobiological factors than by the environment. Further comparative studies are necessary in order to understand not only determinants of disease, but barriers to seeking medical care.

Keywords: Epidemiology. Primary headaches. Chronic daily headaches. Tension-type headaches. Migraine.

LISTA DE ABREVIATURAS E SIGLAS

AmbCef	Ambulatório de Cefaleias
BDI	Inventário de Depressão de Beck
CCD	Cefaleia crônica diária
CTT	Cefaleia do tipo tensional
DTM	Disfunção têmporo-mandibular
HIT	*Headache Impact Test*
IBGE	Instituto Brasileiro de Geografia e Estatística
IC	Intervalo de confiança
ICDH-2004	Classificação Internacional das Cefaleias
MIDAS	*Migraine Disability Test*
MOH	Cefaleia atribuída ao uso excessivo de analgésico
NO	Óxido nítrico
OMS	Organização Mundial de Saúde
PSF	Programa de Saúde da Família
RDC	*Research Diagnostic Criteria for Temporomandibular Disorders*
SDM	Síndrome da dor miofascial
SF-36	*Short-form 36*
SPSS	*Statistical Package for Social Sciences*
TMD	*Temporomandibular disorders*
TP	*Trigger points*
UFMG	Universidade Federal de Minas Gerais

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CONSIDERAÇÕES INICIAIS

Após o término de minha residência em Neurologia, escolhi aprofundar-me no estudo da cefaleia, pois percebia que era uma condição muito prevalente na prática neurológica e, apesar de muito incapacitante, tinha boas respostas terapêuticas (diferente de inúmeras síndromes neurológicas degenerativas que não têm tratamento). Mas percebi, desde o início, que o sucesso do tratamento dependia de ampliar a escuta dos casos, envolvendo tanto aspectos psicossociais como físicos. Comecei meu treinamento no Instituto de Neurologia Deolindo Couto, na Universidade Federal do Rio de Janeiro, com o Dr Abouch Valenty Krymchantowisk, considerado referência mundial em farmacoterapia das cefaleias.

Ainda na residência, trabalhava como plantonista nos fins de semana em Capela Nova-MG, cidade perto de Barbacena, onde me formei. Fui convidado pela Secretaria de Saúde Municipal a criar um ambulatório de Neurologia no Posto de Saúde local, o que fiz assim que terminei a residência.

Em contato com a cefaléia, pensei em realizar um estudo que investigasse a prevalência das cefaleias em todos os moradores de Capela Nova utilizando os novos critérios diagnósticos de Classificação Internacional das Cefaleias de 2004 (ICDH-2004).

Realizei a primeira etapa como pesquisador único, contando com a colaboração dos agentes de Programa de Saúde da Família (PSF) do município para entrevistar todos os moradores. Até então não havia tido a colaboração de epidemiologista no delineamento do estudo, quando, em Miami, no Congresso da Academia Americana de Neurologia, tive a felicidade de encontrar o Dr. Marcelo Bigal, referência mundial no tema e que, numa caminhada valiosa, colaborou muito no projeto. A metodologia pretendida carecia de uma equipe e procurei o Dr. Rodrigo Santiago, que fundou, em 2003, o Ambulatório de Cefaléias do Hospital das Clínicas da Universidade Federal de Minas Gerais (AmbCef-UFMG). Havia poucos meses que meu orientador, Prof. Antônio Lúcio, ingressara no ambulatório e já no meu primeiro encontro com eles fui imediatamente acolhido. Comecei, então, desde junho de 2005, a trabalhar com eles todas as terças-feiras

pela manhã no Ambulatório Bias Fortes no complexo do Hospital das Clínicas da Universidade Federal de Minas Gerais.

Ingressaram comigo uma psiquiatra, Esther Coelho, então mestranda orientada pelo Prof. Antônio Lúcio, e a psicóloga Melissa Coelho. Convidamos um dentista, João Bosco, para liderar uma equipe especializada em dor orofacial (Equipe-DOF) junto com seu colega, Frederico Leite, e a fisioterapeuta Monique Amorim, atualmente substituída pela Betânia Franco. Passamos também a contar com uma dupla de acadêmicos de Medicina em iniciação científica no registro da coleta de dados. Primeiro, foram Felipe e Luiz Paulo, depois Bruno e Tales e, atualmente, Rodrigo Lara e Rafael Tavares.

Em equipe coletamos os dados em Capela Nova e agrupamos os procedimentos de diagnóstico no AmbCef-UFMG, que começaram a ser registrados sistematicamente. Para a coleta, desenvolvemos o Procefaleia, entrevista semiestruturada que permite a criação de banco de dados e hoje é utilizada como parte de um *software* livre na internet para capacitação de médicos de família. Os achados relativos à prevalência e fatores de risco para a migrânea serviram na nossa dissertação de mestrado na Universidade Federal Fluminense, orientada pelo Prof. Pedro Moreira e coorientada pelo Prof Antônio Lúcio, finalizada em 2007.

Em 2009, fui aprovado e muito bem-recebido na Pós-Graduação em Neurociências da UFMG, com a proposta de realizar esta tese. Para melhor compreensão de sua disposição ao longo deste trabalho, descrevi a seguir o contexto em que foram realizados e as sessões da tese em que foram inseridos.

O artigo1 é uma revisão sobre cefaleia crônica diária, publicado na “Revista Brasileira de Medicina”. Ele está apresentado na introdução. Nessa seção há um tópico sobre a ICDH-2004 que descreve os critérios diagnósticos e aspectos gerais da fisiopatologia da migrânea e da CTT, além de uma breve revisão da epidemiologia das cefaleias no Brasil. Na seção de resultados estão primeiro os artigos 2 e 3 relativos à investigação de toda a população de Capela Nova e que foram publicados no *Headache.* Já o artigo 4 trata sobre o estudo de uma amostra de moradores da cidade e foi aceito este mês no mesmo periódico. O artigo 5 refere-se à descrição da casuística dos pacientes doAmbCef-UFMG e está submetido à revista “RAMB-Revista da Associação Médica Brasileira”. A comparação dos dados da comunidade com os do ambulatório foi utilizada para a

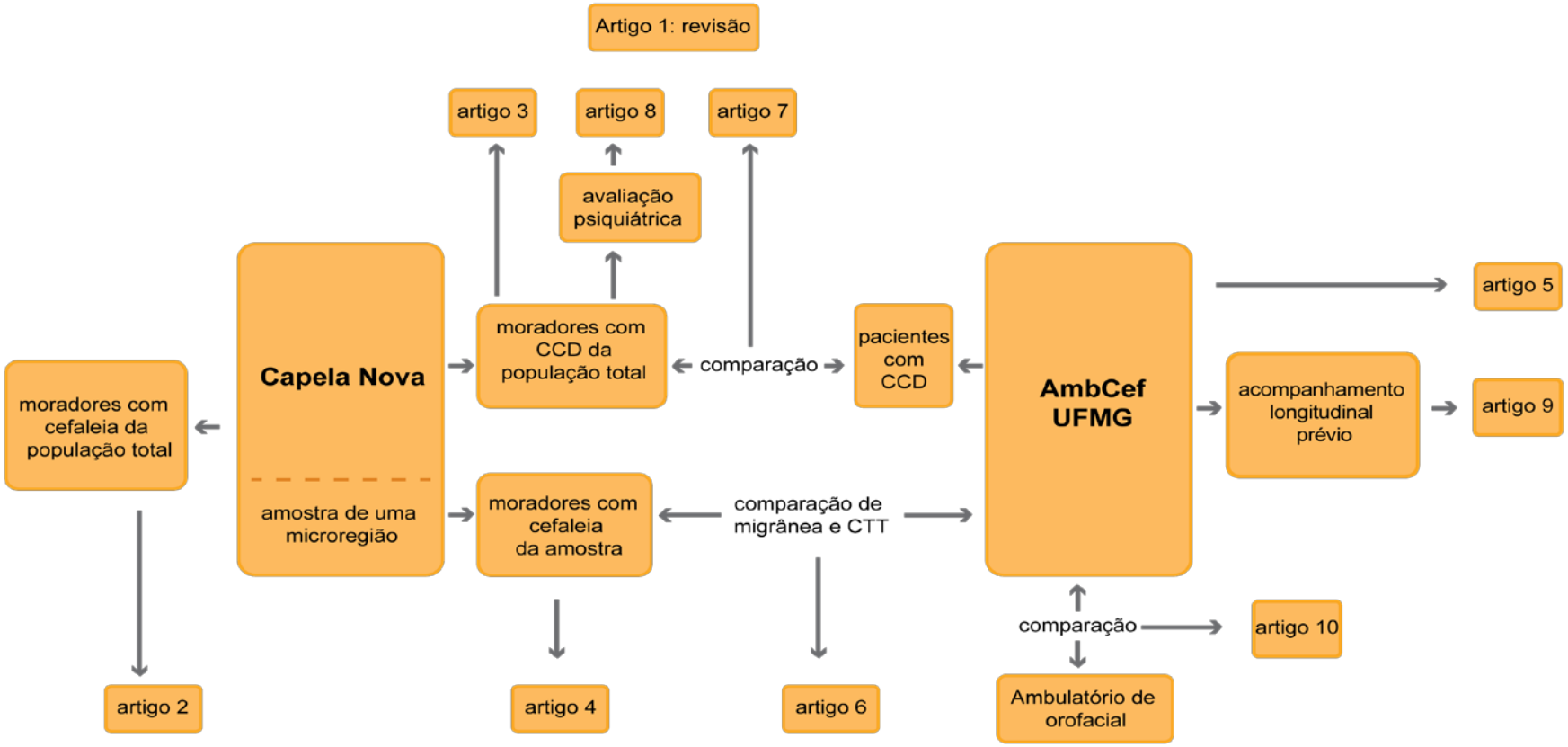
construção dos artigos 6 e 7, submetidos, respectivamente, a *The Journal of Headache and Pain* e na *Cephalalgia.*

Na seção de anexos e apêndices estão, além do questionário Procefaleia, outros estudos complementares conduzidos durante o doutorado. O primeiro comparou os dados colhidos pela avaliação psiquiátrica dos moradores de Capela Nova com uma casuística de pacientes do ambulatório também avaliados pela Esther, o artigo 8, que será submetido à "*General Hospital Psychiatry*". A sistematização da coleta de dados do AmbCef permitiu que conduzíssemos estudo longitudinal prévio para avaliação da estabilidade diagnóstica, publicado no "Arquivos Brasileiros de Psiquiatria", o artigo 9. Finalmente, com a equipe DOF, criamos um Ambulatório de Dor Orofacial, que pressa atendimento mensal. A comparação dos dados dos pacientes desse centro odontológico (CETRO) com os dos pacientes do AmbCef-UFMG serviu para a construção do artigo 10, submetido ao "*Journal Orofacial Pain".*

Todos os artigos foram apresentados em congressos nacionais e internacionais como pôsteres ou apresentação oral, o que colaborou bastante no processo de construção dos trabalhos. O artigo 3 recebeu o prêmio Edgard Raffaelli pela Sociedade Brasileira de Cefaleia em 2006; o artigo 10 obteve o prêmio do Comitê de Dor Orfacial da mesma sociedade em 2010; e o artigo 9 foi escolhido como melhor tema livre oral do Congresso Mineiro de Neurologia em 2009. Finalmente o corpo desta tese está selecionado entre os quatro finalistas de 2011 na categoria epidemiologia do prêmio da Sociedade Brasileira de Dor.

O diagrama da FIG. 1 a seguir representa de forma esquemática a estrutura de construção dos artigos da tese.

FIGURA 1 – Estrutura de construção dos artigos da tese



1 INTRODUÇÃO

A cefaleia acomete aproximadamente 99% das mulheres e 93% dos homens no decorrer da vida e cerca de 40% dos indivíduos têm cefaleia com certa regularidade[1]. A migrânea, ou enxaqueca, é o tipo de cefaleia primária que mais frequentemente leva o indivíduo a procurar por assistência médica[2], podendo associar-se a significativo impacto na vida das pessoas afetadas, de seus familiares e da comunidade[3]. A cefaleia do tipo tensional (CTT), apesar de bem menos intensa que a migrânea, também pode causar impacto na vida dos acometidos, principalmente na sua forma crônica[4].

De fato, quando as cefaleias assumem frequência diária ou quase diária (igual ou acima de 15 dias por mês por pelo menos três meses), são denominadas, do ponto de vista sindrômico, de cefaleia crônica diária (CCD)[5]. A maioria dos casos de CCD é de cefaleias primárias, inicialmente episódicas, que se cronificam com o passar do tempo, dependendo de alguns fatores associados[6,7]. Entre eles destacam-se o uso excessivo de analgésicos e o dolorimento contínuo da musculatura pericraniana[4,7].

Estabelecer adequadamente o diagnóstico das cefaleias nos casos de CCD, principalmente quando esses fatores estão presentes, é algo desafiador, pois se houver uso excessivo de medicação sintomática é necessária a reavaliação do caso oito semanas após a suspensão do uso abusivo[8]. Já a avaliação adequada da musculatura pericraniana depende da palpação muscular por profissionais treinados[8]. Além disso, a ausência de marcadores biológicos nos casos de cefaleias primárias faz com que o diagnóstico seja eminentemente clínico.

Por isso, o “padrão-ouro” de coleta de dados é a entrevista clínica por especialista em cefaleia, mas trata-se de um método demorado e dispendioso para ser realizado com grandes amostras populacionais[9]. Assim, a maioria dos estudos que utilizam a entrevista face a face com o médico é realizada em centros de assistência à saúde, o que nem sempre reflete a realidade na comunidade. Sabe-se que os estudos com base populacional são mais

abrangentes, identificando ativamente as pessoas, o que permite estimativa mais acurada da magnitude do problema[10].

Em todo o mundo, incluindo o Brasil, o método de coleta dos dados mais utilizado nos estudos populacionais tem sido a entrevista telefônica feita por leigos. Apesar de haver instrumentos validados de alta sensibilidade e especificidade na detecção de alguns tipos de cefaleia[11], não é possível estabelecer o diagnóstico correto de vários casos, principalmente quando há uso excessivo de analgésicos, dolorimento da musculatura pericraniana e mais de um tipo de cefaleia no mesmo indivíduo. Parece necessária a realização de estudos epidemiológicos que utilizem a entrevista direta com o médico, incluindo avaliação clínica e exame neurológico em países como Brasil, onde a cefaleia ainda é subestimada e subtratada[12].

De todo modo, os estudos realizados em centros especializados também são importantes, pois investigam pacientes com alto grau de complexidade e com demanda por assistência em nível terciário. A condução de pesquisas integradas na comunidade e nesses centros poderia trazer informações estratégicas do perfil dos indivíduos com cefaleia acompanhados na atenção primária à saúde. Conhecer as diferenças ou mesmo as semelhanças dos casos, principalmente das cefaleias primárias mais comuns (migrânea e cefaleia do tipo tensional), pode auxiliar no planejamento da prevenção e do tratamento dos casos. Pelo que se sabe, ainda não foram realizados estudos comparativos dessa natureza, ou seja, que tivessem investigado com a mesma equipe de profissionais as cefaleias primárias de pacientes de centros especializados e de indivíduos da comunidade, de maneira integrada.

1.1 Classificação Internacional das Cefaleias

O diagnóstico das cefaleias primárias baseia-se em critérios clínicos descritos na Classificação Internacional das Cefaleias (ICDH-2004), que teve a primeira edição publicada em 1988 e a segunda em 2004[8].

Segundo essa classificação, as cefaleias estão agrupadas em três partes: a) parte 1 - cefaleias primárias, que não são relacionadas a lesões estruturais; b) parte 2 - cefaleias secundárias, englobando as que são manifestações de lesões

estruturais subjacentes; c) parte 3 - neuralgias cranianas, dores faciais primárias e outras cefaleias.

1.2 Migrânea

A ICDH-2004 classifica a migrânea em seis subtipos (QUADRO 1). Os dois principais são: a) migrânea sem aura; b) migrânea com aura (primariamente caracterizada pelos sintomas neurológicos focais que normalmente precedem ou às vezes acompanham a cefaleia). Alguns pacientes também experimentam uma fase premonitória, antecedendo em horas ou dias o aparecimento da cefaleia, e uma fase de resolução da crise. Sintomas premonitórios e de resolução incluem hiperatividade, hipoatividade, depressão, apetite específico para determinados alimentos, bocejamento repetitivo e outros sintomas inespecíficos reportados por alguns pacientes Os critérios diagnósticos de migrânea sem e com aura estão representados nos QUADROS 2 e 3, respectivamente.

Embora não se conheça completamente os mecanismos fisiopatológicos da migrânea, acredita-se que haja diferenças entre a migrânea sem e com aura. Nesse tipo antes ou simultaneamente ao início dos sintomas da aura, ocorre diminuição fluxo sanguíneo cerebral em regiões corticais que correspondem clinicamente à área afetada e frequentemente a uma área maior. A redução do fluxo normalmente inicia-se posteriormente e expande-se anteriormente, geralmente acima do limiar de isquemia. Após uma a várias horas, ocorre transição gradual para hiperemia na mesma região. A depressão alastrante de Leão foi implicada nesse processo[8].

Já na migrânea sem aura, durante as crises o fluxo sanguíneo cerebral regional não revela quaisquer alterações sugestivas da depressão cortical alastrante. Não obstante, podem ocorrer modificações do fluxo sanguíneo no tronco encefálico e alterações corticais secundárias à ativação pela dor. Por outro lado, o mensageiro molecular óxido nitrico (NO) e o peptídeo relacionado ao gene da calcitonina (CGRP) estão claramente envolvidos. Embora a migrânea tenha sido previamente considerada principalmente vascular, a importância da sensibilização das terminações nervosas perivasculares e a possibilidade de que

as crises possam ter início no sistema nervoso central receberam atenção crescente durante as últimas décadas. Ao mesmo tempo, o circuito da dor da migrânea e vários aspectos da neurotransmissão relacionados a esse sistema foram reconhecidos. O advento dos triptanos, agonistas dos receptores 5HT1B/D, foi uma significativa contribuição. Essas drogas têm notável eficácia em crises de migrânea e, devido à sua alta especificidade por receptores, seu mecanismo de ação propiciou nova abordagem aos mecanismos da migrânea. Está claro, no momento, que a migrânea sem aura é um transtorno neurobiológico e a ciência, tanto clínica, quanto básica, propicia avanços crescentes em nosso conhecimento a respeito dos mecanismos desse distúrbio (ICDH-2004)[8].

QUADRO 1 - Codificação e classificação de migrânea segundo a Classificação Internacional das Cefaléias - 2004

Códigos	**Classificação**
1	Migrânea
1.1	Migrânea sem aura
1.2	Migrânea com aura
1.3	Síndromes periódicas da infância comumente precursoras de migrânea
1.4	Migrânea retiniana
1.5	Complicações da migrânea
1.6	Provável migrânea

QUADRO 2 - Critérios diagnósticos de migrânea sem aura segundo a Classificação Internacional das Cefaleias - 2004

A	Pelo menos cinco crises preenchendo os critérios B a D.
B	Cefaleia durando quatro a 72 horas (sem tratamento ou com tratamento ineficaz).
C	Cefaleia preenche pelo menos duas das seguintes características:
	1. Localização unilateral
	2. Caráter pulsátil
	3. Intensidade moderada ou forte
	4. Exacerbada por atividades físicas rotineiras
D	Durante cefaleia, pelo menos um dos seguintes:
	1. Náusea e/ou vômitos
	2. Fotofobia e fonofobia
E	Não atribuída a outro transtorno

QUADRO 3 - Critérios diagnósticos de migrânea com aura segundo a Classificação Internacional das Cefaleias - 2004

A	Pelo menos duas crises preenchendo o critério B
B	Presença de aura, precedendo a crise de cefaleia, que preenche os critérios de migrânea sem aura, com duração de cinco a 60 minutos, caracterizada por: - Sintomas visuais positivos (moscas volantes, manchas ou linhas) e/ou negativos (perda de visão homônima) - Sintoma-sensitivos - Disfasia
C	Não atribuída a outro transtorno

1.3 Cefaleia do tipo tensional

A cefaleia do tipo tensional (CTT), conforme os critérios diagnósticos da ICDH-2004, é subdividida conforme a frequência de dor (episódica ou crônica) e a presença ou não de dolorimento pericraniano (QUADRO 4).

A CTT episódica infrequente pode ser definida como cefaleia durando minutos a dias, ocorrendo menos de uma vez por mês. A dor é tipicamente bilateral, tem caráter em pressão ou aperto, de leve a moderada intensidade, e não piora com atividade física rotineira. Não há náusea, mas fotofobia ou fonofobia podem estar presentes. É importante salientar que não se trata necessariamente de um fenômeno patológico. É tão comum, que virtualmente quase todas as pessoas vão experimentá-la em algum momento ao longo da vida. Tem impacto muito reduzido no indivíduo e não merece muita atenção do profissional médico[8] (QUADRO 5). A CTT episódica infrequente pode ser subdividida quanto à presença ou não de dolorimento pericraniano. Nesse caso, além dos critérios de A-E do QUADRO 5, também deve estar presente aumento da sensibilidade dolorosa pericraniana à palpação[2].

A cefaleia do tipo tensional episódica frequente diferencia-se do subtipo infrequente, pois os episódios ocorrem mais de uma vez por mês, mas não chegam a atingir a frequência quase diária da CTT crônica. Os critérios diagnósticos são em tudo semelhantes à CTT episódica infrequente apresentados no QUADRO 4, excetuando-se a frequência das crises. Nesse caso, para efeito diagnóstico é necessária a ocorrência de pelo menos 10 crises de cefaleia na vida, que ocorrem em com frequência inferior a 15 dias mensais, ou seja, mais de 12 e menos de 180 crises anuais. A CTT episódica frequente coexiste muitas vezes com migrânea sem aura[8].

A CTT episódica frequente pode ser subdividida quanto à presença ou não de dolorimento pericraniano. Nesse caso, além dos critérios de B-E do QUADRO 5, também deve haver aumento da sensibilidade dolorosa pericraniana à palpação[2]. A classificação da CTT crônica será descrita no artigo 1, que faz uma revisão sobre a CCD.

Ao contrário da migrânea, a fisiopatologia da CTT ainda permanece mal compreendida. Inicialmente, acreditava-se na hipótese de que a CTT fosse consequência de um estímulo nocivo físico ou psicológico que levaria ao estado

de contração persistente ou intermitente da musculatura do crânio e nuca. Essa contração levaria à isquemia muscular e, consequentemente, à dor. Mecanismos algógenos periféricos muito provavelmente exercem papel na CTT episódica, tanto infrequente como na freqüente. Por outro lado, mecanismos algógenos centrais exercem papel mais importante na CTT crônica.

Nos casos em que há dolorimento pericraniano, possivelmente tanto fatores locais e sistêmicos podem estar associados: trauma, estresse, tensão emocional, impulso de dor profunda, fadiga e sedentarismo acompanhado de baixo condicionamento físico. Do ponto de vista bioquímico, aventa-se que algumas modificações podem contribuir para explicar, em parte, a fisiopatologia da CTT. Tem havido mais interesse no estudo do papel do NO no desencadeamento da dor em pacientes portadores de CTT, pois o trinidato de gliceril (substância que atua na formação do NO) piora a dor desses pacientes[8].

Além das alterações bioquímicas propriamente ditas, mecanismos periféricos podem estar envolvidos na sensibilização anormal de receptores nociceptivos (nociceptores miofasciais) que se encontram na musculatura pericraniana, enquanto mecanismos centrais são decorrentes de atividade anormal do tronco encefálico. Essa anormalidade leva à alteração da modulação central da dor e diminuição dos sistemas de antinocicepção central, graças ao aumento da atividade das *on-cells* (células facilitadoras). Deste modo, a dor da CTT é uma consequência da interação de mecanismos centrais e periféricos (ICDH-2004)[8].

QUADRO 4 - Classificação da cefaleia do tipo tensional segundo a Classificação Internacional das Cefaleias - 2004

2.1 CEFALEIA DO TIPO TENSIONAL EPISÓDICA INFREQUENTE
2.1.1 Cefaleia do tipo tensional episódica infrequente associada à hiperalgesia pericraniana
2.1.2 Cefaleia do tipo tensional episódica infrequente não associada à hiperalgesia pericraniana
2.2 CEFALEIA DO TIPO TENSIONAL EPISÓDICA FREQUENTE
2.2.1 Cefaleia do tipo tensional episódica frequente associada a hiperalgesia pericraniana
2.2.2 Cefaleia do tipo tensional episódica frequente não associada à hiperalgesia pericraniana
2.3 CEFALEIA DO TIPO TENSIONAL CRÔNICA
2.3.1 Cefaleia do tipo tensional crônica associada à hiperalgesia pericraniana
2.3.2 cefaleia do tipo tensional crônica não associada à hiperalgesia pericraniana

QUADRO 5 - Critérios diagnósticos da CTT episódica infrequente segundo a Classificação Internacional das Cefaleias - 2004

A. Pelo menos 10 crises que ocorrem menos de um dia por mês, em média (< 12 dias por ano) e cumprindo critérios B-D.
B. Cefaleia que dura 30 minutos a sete dias
C. A cefaleia tem pelo menos duas das seguintes características:
1. Localização bilateral
2. Caráter em pressão/ aperto (não pulsátil)
3. Intensidade leve ou moderada
4. Não é agravada por atividade física rotineira como caminhar ou subir degraus
D. Ambos os seguintes:
1. Ausência de náusea ou vômito (anorexia pode ocorrer)
2. Fotofobia ou fonofobia (apenas uma delas está presente).
E. Não ser atribuída a outro distúrbio.

Segundo a ICDH-2004, o aumento da sensibilidade dolorosa pericraniana detectado pela palpação é o achado clínico mais significativo nos pacientes com CTT. A hiperalgesia aumenta com a intensidade e frequência da cefaleia. O valor diagnóstico da eletromiografia e da algometria de pressão é limitado, enquanto é facilmente pesquisada com base na palpação com movimentos pequenos giratórios e pressão firme com o segundo e o terceiro dedos no músculo frontal, temporal, masseter, esternocleidomastoideo, esplênio e trapézio[8]. Uma escala de hiperalgesia local de zero a três em cada músculo pode ser utilizada para cada indivíduo.

Foi demonstrado que, usando um dispositivo sensível à pressão que permite a palpação com pressão controlada, esse exame clínico fica mais válido e reproduzível. Porém, tal equipamento não está geralmente disponível para os clínicos e é recomendável que os clínicos executem a palpação simplesmente como um exame clínico tradicional. A palpação, portanto, é um guia útil para a estratégia de tratamento, levando em conta que, nos casos em que a dor relatada pelo paciente é reproduzida pela palpação, pode estar presente a síndrome de dor miofascial (SDM)[13]. É discutido se essa condição seria uma comorbidade da CTT ou se seria a mesma condição classificada de forma diferente pela ICDH-2004 e pelo *Research Diagnostic Criteria for Temporomandibular Disorders* (RDC)[14].

A dor miofascial é definida como uma disfunção dolorosa muscular difusa dentro das estruturas miofasciais, envolvendo dor referida nos pontos gatilhos ou *trigger points* (TP). O TP é definido como uma área hipersensível localizada em uma banda tensa de um músculo, tendão ou ligamento, de onde impulsos “bombardeiam” o sistema nervoso central criando um padrão de dor regional referida e/ou sintomas autonômicos de provocação. Eles podem ser ativos ou latentes, diferindo entre si quanto ao local de origem e referência da dor. Os ativos têm local de origem diferente do local onde a dor é sentida, enquanto os latentes têm local de origem e sensação da dor coincidente, são menos dolorosos à palpação e produzem menos disfunção que os ativos. Diante de estresses físicos exógenos, endógenos ou emocionais, tornam-se ativos e geram síndromes dolorosas ou incapacidade funcional[15].

O diagnóstico de dor miofascial nas disfunções têmporo-mandibulares é dado pelo RDC quando a dor é relatada pelo paciente em resposta à palpação de

três ou mais pontos hipersensíveis dos músculos mastigatórios em avaliação clínica, juntamente com questionário autoaplicável. Esse sistema de classificação foi criado para prover um critério de classificação que seja universalmente aceito e validado[14].

1.4 Epidemiologia das cefaleias primárias no Brasil

No Brasil, inicialmente foram conduzidos estudos em populações específicas (clínicas, funcionários de hospital, escolares ou estudantes de Medicina). No estudo de Bastos, Almeida Filho e Santana (1993), em Salvador-BA, foi estimada apenas a prevalência da cefaleia em geral em apenas 14,8% dos entrevistados, não sendo pesquisada especificamente a migrânea[16]. Na região Sul, Barea, Tannhauser e Rotta (1996) referiram, em população de Porto Alegre-RS, a prevalência de migrânea em 16,3% de CCD em 7,3%. Porém, a população estudada foi de escolares de 5ª a 8ª série[17]. Bigal *et al*. (2000), em pesquisa em Ribeirão Preto-SP, estimaram a prevalência de cefaleia em 30,4% entre funcionários de hospitais [18]. Sanvito *et al*. (1996), em São Paulo-SP, investigaram a prevalência de migrânea em estudantes de Medicina da Santa Casa de Misericórdia com taxas de 54,4% entre as mulheres e 28,3% entre os homens[19]. Em Florianópolis-SC, Da Costa *et al*. (2000) avaliaram a frequência de cefaleia em estudantes de medicina da Universidade Federal de Santa Catarina[20]. Neste estudo a frequência de migrânea sem aura foi de 31,3%, de migrânea com aura 8,2% e de CTT de 7,5%.

O primeiro estudo que analisou a população geral foi realizado em Porto Alegre-RS por Wiehe*et al.* (2002)[21]. Eles estimaram na população a prevalência de CTT em 66,2%. Em pesquisa realizada em vários países da América Latina, incluindo as cidades de Marília e São Paulo-SP, foi relatada prevalência de migrânea de 12,6%[22]. Dissertação de mestrado registrou a prevalência de cefaleia em Ribeirão Preto-SP: de migrânea foi 21,4%, CTT 16,8% e CCD, 2,6%[23]. Em Pelotas-RS, encontrou-se prevalência de migrânea de 10,7%[24]. As taxas de prevalência anual, na cidade de Florianópolis-SC, foram descritas como 22,1% para migrânea, 22,9% para CTT e 6,4% para CCD[25]. Considerando-se a prevalência da cefaleia como sintoma, estudos nacionais têm demonstrado que a

maioria da população brasileira apresenta episódios desse distúrbio no intervalo de um ano[26-28].

Estudo nacional realizado recentemente no Brasil por leigos previamente treinados utilizou a coleta de dados, via telefone. Foram entrevistados 3.848 indivíduos de 18 a 79 anos, nos 27 estados, do total de 8.168 domicílios contatados.

A existência de cefaleia nos 12 meses antes da entrevista foi referida por 2.790 indivíduos, portanto, a prevalência foi de 72,2%. A taxa de migrânea foi de 15,2%, de CTT de 13,0% e de CCD de 6,9%. Migrânea foi 2,2 vezes mais prevalente em mulheres, 1,5 vez mais em sujeitos com mais de 11 anos de estudo formal, 5,9 vezes mais em indivíduos com renda familiar inferior a cinco salários mínimos e 1,43 vez mais em pessoas que não faziam exercícios regulares. A CTT foi 1,62 vez mais prevalente em homens e 1,54 vez em indivíduos com mais de 11 anos de estudo formal. A CCD foi 2,4 vezes mais prevalente em mulheres, 1,72 vez mais em desempregados, 1,63 vez mais em indivíduos com renda familiar igual ou superior a 10 salários mínimos e duas vezes mais em pessoas que não faziam exercícios regulares[29-31].

Outro estudo nacional foi o Projeto Atenção Brasil. Ele foi realizado em duas fases: a fase 1 (piloto) foi a campo no primeiro semestre de 2009, na cidade de Santa Cruz das Palmeiras-SP, e teve como amostra-alvo todas as crianças entre cinco e 12 anos matriculadas no ensino público municipal. As mães de 2.173 crianças foram diretamente entrevistadas por meio de questionários validados no Brasil. A fase dois, de âmbito nacional, transcorreu ao longo do segundo semestre de 2009 e envolveu a participação de 125 professores que aplicaram o questionário aos pais de 8.000 crianças e adolescentes de 22 estados brasileiros. A prevalência de migrânea nas crianças foi de 3,8% e aumentou com a idade. Tendo como referência a idade de seis anos (2,6%), a prevalência foi numericamente mais alta em todas as idades subsequentes e significativamente mais elevada a partir dos 10 anos (5,5%). A prevalência de CCD foi de 1,68%[32].

Em centros de atendimento terciário, a cefaleia primária predominante é a migrânea, com taxas de frequência que giram em torno de 30 a 80%[12,33,34]. Esses valores são praticamente os mesmos para os casos de CCD, sendo a maioria causada por migrânea relacionada à cefaleia atribuída ao uso excessivo de

analgésico (MOH) ou migrânea crônica. A CTT, mesmo na forma crônica (CTTC), é menos diagnosticada nos ambulatórios médicos especializados em cefaleia[35].

No Brasil, existem poucos dados epidemiológicos de pacientes atendidos em serviços terciários. Em estudo anterior conduzido em nosso ambulatório, a migrânea foi diagnosticada em 79,2% dos pacientes, enquanto a prevalência de CCD foi de 39,6%[36]. Em serviço especializado da Escola Paulista de Medicina, 37,98% dos pacientes apresentaram migrânea como queixa principal e 22,65% CTT[34]. Ambas as pesquisas utilizaram os critérios da ICDH-2004. A diferença na frequência de migrânea pode refletir diferenças metodológicas, uma vez que o estudo paulista é retrospectivo e o primeiro, de corte transversal. Entretanto, a mais alta prevalência de migrânea é evidente e reflete sua importância clínica na decisão de procurar ou ser encaminhado para um serviço especializado.

2 ARTIGO 1 -

Cefaleia crônica diária

Chronic daily headache

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Unterms: chronic daily headache, migraine, therapeutic.

Sumary

Chronic daily headache encompasses the headaches lasting more than 15 days per month, at least for 3 months. It is a syndrome extremely common in neurologic centers oriented towards headaches. In this article the diagnosis and treatment of such disorder are presented and discussed.

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Resumo

A cefaleia crônica diária (CCD) compreende quadros de dor de cabeça com duração superior a 15 dias ao mês por, pelo menos, três meses. Não se trata de um diagnóstico etiológico, mas de uma síndrome que representa a principal demanda por atendimento neurológico em centros especializados em cefaleia. As três principais causas de CCD são: migrânea crônica, cefaleia do tipo tensional crônica e cefaleia por abuso de medicamentos. Neste artigo serão abordados os aspectos clínicos e terapêuticos relacionados à abordagem dos pacientes que apresentam cefaleia diária ou quase diária.

Introdução: o que é a cefaleia crônica diária?

A cefaleia crônica diária (CCD) constitui uma síndrome caracterizada por dor de cabeça com frequência diária ou quase diária, ou seja, presença de dor por pelo menos pelo

menos 15 dias ao mês, num período mínimo de três meses(1,2). Trata-se de uma síndrome e não de um diagnóstico etiológico(3).

O termo CCD é usado de forma corrente nos centros especializados em cefaleia, tendo em vista que é muito comum a demanda por atendimento de pacientes que sofriam de cefaleias episódicas e que, com o tempo, passaram a apresentar dor de forma diária ou quase diária(4). Uma parcela significativa desses indivíduos usa analgésicos de forma excessiva e muitos apresentam comorbidades psiquiátricas, destacando-se os transtornos de humor, como depressão, e os transtornos ansiosos(5).

Ainda não se conhece o mecanismo exato pelo qual a cefaleia se cronifica, mas a relação com o uso abusivo de analgésicos e as comorbidades psiquiátricas vem sendo confirmada em estudos realizados tanto em centros de atendimento especializado quanto na própria comunidade(6,7). Essas pesquisas têm revelado ainda que as principais causas de CCD são a migrânea crônica, a cefaleia do tipo tensional crônica e a cefaleia atribuída ao uso excessivo de analgésicos(4).

Neste artigo, discutiremos como diagnosticar e tratar os tipos de cefaleia que mais comumente evoluem como CCD.

Epidemiologia

Estudos epidemiológicos podem ser conduzidos em centros clínicos ou na comunidade. A crítica que se faz quando investiga amostras de centros especializados reside no fato de que os pacientes apresentariam doenças mais complexas ou mais graves, o que não refletiria o que acontece de fato na população geral. Na Europa Ocidental e na América do Norte já foram realizados diversos estudos nos dois cenários(4,8-12). Esses estudos têm mostrado que de 1% a 6% da população é acometida pela CCD, com amplo predomínio nas mulheres. Em centros terciários, a prevalência varia de 30% a 84% dos pacientes atendidos(4,8-12).

No Brasil, um estudo de base populacional realizado por nós num pequeno município do interior de Minas Gerais, Capela Nova, mostrou que, mesmo em cidades pequenas e distantes de grandes centros urbanos, a prevalência de CCD está longe de ser desprezível(7). Nesta pesquisa todos os moradores da cidade foram avaliados em duas fases. Primeiro, os habitantes responderam a questionários aplicados por agentes do Programa de Saúde da Família. Posteriormente, foram avaliados clinicamente por uma equipe de neurologistas, psiquiatras e dentistas da Universidade Federal de Minas Gerais (UFMG). A CCD foi identificada em 3,6% da população e na maioria dos casos esteve presente algum tipo de comorbidade, como transtornos psiquiátricos (67,3%) e disfunções têmporo-mandibulares (DTM) (58,1%). Os transtornos depressivos e ansiosos foram os mais frequentemente diagnosticados, acometendo 32,7% e 38,5% dos casos de CCD, respectivamente.

No Ambulatório de Cefaleias do Hospital das Clínicas da UFMG a CCD foi diagnosticada em 46,3% de 83 pacientes acompanhados longitudinalmente no período de 18 meses. Neste estudo os principais tipos de cefaleia responsáveis pela CCD foram a migrânea crônica (26,7%), a cefaleia por abuso de medicamentos (53,3%) e a cefaleia do tipo tensional crônica (11,1%)(13).

Como diagnosticar a CCD?

O diagnóstico do quadro subjacente à CCD é feito de forma eminentemente clínica. O primeiro passo é a coleta cuidadosa da história clínica, avaliando se existem sinais de alerta que indiquem a necessidade de propedêutica específica. Após certificar-se de que não há causa secundária subjacente, será construído o diagnóstico a partir das características semiológicas da dor (duração, localização, caráter, intensidade e a presença ou não de sintomas associados como fonofobia, fotofobia, náuseas e vômitos). Finalmente, a frequência e o tipo de analgésicos utilizados pelo paciente devem ser avaliados(14).

Nos casos de uso excessivo de analgésicos, o diagnóstico definitivo só pode ser estabelecido após a retirada do abuso de medicamentos. Isso porque os analgésicos têm a propriedade de interferir na manifestação típica da cefaleia(15). O exemplo mais comum é o caso da migrânea que caracteristicamente se manifesta com dor unilateral, pulsátil, intensa, com fono e fotofobia, associada a náuseas, com intervalo livre de dor entre as crises. Os pacientes migranosos quando empregam medicamentos abusivamente, como triptanos e opioides por mais de dez vezes por mês ou analgésicos comuns por mais de 15 dias por mês, têm o padrão de dor modificado. O paciente passa a exibir dor quase diária, que se torna menos intensa, bilateral, tipo peso, com menos fobias neurossensoriais e com náusea leve, podendo apresentar eventualmente crises com o padrão migranoso típico(16). Isso poderia levar o clínico a considerar equivocadamente que o paciente apresentaria cefaleia do tipo tensional associada à migrânea(17). Quando se consegue retirar o uso excessivo de analgésicos, a dor tende a retomar seu padrão episódico e as características anteriores à cronificação. No entanto, até 30% dos pacientes não retornam ao padrão episódico de dor com a interrupção do abuso, caracterizando quadros mais graves e refratários ao tratamento(18).

Critérios diagnósticos das principais causas de CCD

Migrânea crônica

A migrânea crônica é caracterizada pela presença de cefaleia por mais de 15 dias por mês por, pelo menos, três meses, sendo que no mínimo oito dessas crises sejam tipicamente migranosas(19) (Quadro 1). Os sintomas típicos da crise migranosa incluem: dor de moderada a grave intensidade, localização unilateral, qualidade pulsátil, agravada por atividade física rotineira, associada a náusea e/ou vômitos, fotofobia e fonofobia.

Como descrito anteriormente, é comum o relato de um lento processo de transformação de crises isoladas típicas de migrânea em episódios frequentes de dor menos intensa e com os sintomas de fotofobia, fonofobia e/ou náuseas atenuados ou ausentes. Portanto, os pacientes, que inicialmente apresentavam migrânea episódica, desenvolvem um padrão de cefaleia diária ou quase diária com características mistas de cefaleia do tipo tensional e migrânea(20). A transformação da migrânea de episódica em crônica ocorre, em geral, mas não exclusivamente, quando há abuso de medicamentos. Segundo os critérios da Sociedade Internacional de Cefaleia(2), o diagnóstico de migrânea crônica só poderia ser estabelecido quando os sintomas persistirem após a retirada do abuso de medicamentos. Até o período mínimo requerido de dois meses de retirada, como o abuso pode ser tanto causa como consequência da CCD, o paciente recebe o diagnóstico provisório de "provável migrânea crônica".

Quadro 1 - Critérios diagnósticos da migrânea crônica, segundo a Sociedade Internacional de Cefaleias, 2004[2]

Critérios diagnósticos da migrânea crônica
A. Cefaleia (tipo tensional e/ou migrânea) ≥15 dias por mês em pelo menos três meses.
B. Ocorrer em paciente que teve pelo menos 5 ataques preenchendo os critérios da IHS 1.1 Migrânea sem aura.
C. A cefaleia, ≥8 dias por mês em pelo menos 3 meses, preenche C1 e/ou C2 abaixo, isto é, preenche os critérios de dor e sintomas associados da migrânea sem aura.
1) Tem pelo menos dois de a-d.
a. Localização unilateral
b. Qualidade pulsátil
c. Intensidade moderada ou severa da dor
d. Agravada por ou causando impedimento de atividades físicas de rotina (caminhar ou subir escadas) e ao menos 1 de a ou b:
a) Náusea e/ou vômitos
b) Fotofobia e fonofobia
2) Tratada e aliviada por triptano(s) ou ergot antes do esperado desenvolvimento de C1 acima.
D. Sem abuso de medicamentos e não atribuída a outro distúrbio.

Quadro 2 - Critérios diagnósticos da cefaleia do tipo tensional crônica, segundo a Sociedade Internacional de Cefaleias, 2004[2]

Critérios diagnósticos da cefaleia do tipo tensional crônica
A. Cefaleia que ocorre em 15 ou mais dias por mês em média durante mais de três meses (180 ou mais dias por ano) e preenche os critérios B-D.
B. A cefaleia dura horas ou pode ser contínua.
C. A cefaleia tem pelo menos duas das seguintes características: 1) Localização bilateral; 2) Caráter em pressão/aperto (não pulsátil); 3) Intensidade leve ou moderada. 4) Não é agravada por atividade física rotineira como caminhar ou subir degraus.
D. Ambas as seguintes características: 1) Não mais que um dos seguintes sintomas: fotofobia, fonofobia ou náusea leve; 2) Nem náusea moderada ou intensa, nem vômitos.
E. Não ser atribuída a outro distúrbio.

Quadro 3 - Critérios diagnósticos da cefaleia por abuso de medicamentos, segundo a Sociedade Internacional de Cefaleias, 2004[2]

Critérios diagnósticos da cefaleia por abuso de medicamentos
A. Cefaleia que ocorre em 15 ou mais dias por mês.
B. Abuso regular, por mais de três meses, de uma ou mais drogas que podem ser tomadas para tratamento agudo ou sintomático de cefaleia. 1. Ergotamina, triptanos, opioides ou combinação de analgésicos por ≥ 10 dias/mês em base regular por mais de 3 meses. 2. Analgésicos simples ou qualquer combinação de ergotamina, triptanos, opioides por ≥ 15 dias/mês em base regular por mais de três meses sem abuso de uma classe isoladamente.
C. Cefaleia iniciou-se ou piorou durante o abuso de medicamentos.

Cefaleia do tipo tensional crônica

A cefaleia do tipo tensional crônica (CTTC) é uma condição clínica que evolui da cefaleia do tipo tensional episódica, com crises diárias ou muito frequentes de dor que duram de 30 minutos até sete dias. A dor é tipicamente bilateral, com caráter em pressão ou aperto, de leve a moderada intensidade, frequentemente na região occipital ou difusa e não piora com atividade física rotineira. Náusea leve ou fonofobia pode estar presente em pacientes com o diagnóstico de CTTC(20) (Quadro 2). É interessante ressaltar que a cefaleia do tipo tensional, embora seja a forma mais comum de dor de cabeça na comunidade, é menos frequente na prática clínica que a migrânea. Possivelmente os pacientes com esse tipo de cefaleia não buscam atenção médica, dado o menor impacto da dor no cotidiano e na qualidade de vida(13). Ressalta-se que estudos têm revelado que o dolorimento pericraniano, muitas vezes detectado na palpação da musculatura craniana, facial ou cervical, denotam que pode haver uma sobreposição da CTTC com um tipo específico de DTM, a síndrome da dor miofascial. No estudo, citado anteriormente realizado em Capela Nova, detectou-se uma maior associação entre DTM com CTTC, sugerindo que o comprometimento muscular é um fator relevante na patogênese desta dor(7).

Quadro 4 - Medidas gerais não farmacológicas utilizadas no tratamento da cefaleia crônica diária (CCD)

Medidas não farmacológicas no tratamento da CCD
• Orientação do paciente quanto ao diagnóstico.
• Adoção de um diário de crises com o registro do dia, horário e intensidade da cefaleia, além de marcação dos dias da menstruação, quando for o caso.
• Identificar a presença de possíveis fatores desencadeantes das crises, como: estresse ocupacional e/ou social, privação de sono, menstruação, jejum prolongado e fatores alimentares.
• Discutir possíveis mudanças no estilo de vida, como incentivar a prática de atividade física aeróbica regular.

Cefaleia por abuso de medicamentos

A cefaleia por abuso de medicação se refere à cefaleia atribuída ao consumo excessivo de medicamentos que, a princípio, seriam empregados justamente para tratar a cefaleia(21) (Quadro 3). Porém, esses medicamentos contribuem intensamente para a cronificação da dor, principalmente devido à diminuição do limiar de dor e à menor eficácia das medicações profiláticas nos indivíduos que fazem uso excessivo de analgésicos(22). Pacientes com cefaleias frequentes geralmente abusam de analgésicos, especialmente analgésicos que combinam ácido acetilsalicílico, dipirona, acetaminofeno e cafeína opioides, ergotamina ou triptanos(23). Interessantemente, tem sido observada variação no intervalo entre o início do uso excessivo do medicamento e o desenvolvimento da cefaleia por abuso conforme a droga: triptanos (< 2 anos) induzem cefaleia crônica diária mais rapidamente que ergotamina (2 a 3 anos) e analgésicos (> 4 anos)(24). Segundo a Sociedade Internacional de Cefaleia, o diagnóstico de cefaleia por abuso de medicamentos só deve ser realizado de forma prospectiva, ou seja, com o acompanhamento por aproximadamente dois meses após a suspensão do abuso da substância, quando se observará a possível melhora clínica do paciente, que tende a assumir o padrão episódico da dor(2).

Tratamento

O tratamento da CCD costuma ser desafiador, mas gratificante nos pacientes que têm maior adesão(25). Sugere-se uma estratégia de uma abordagem integrada, incluindo medidas gerais, profilaxia e analgesia. Nesse tipo de abordagem, as medidas não farmacológicas são enfatizadas (Quadro 4), principalmente no que tange à orientação do paciente sobre seu diagnóstico. Muitos mantêm a falsa expectativa de receber um diagnóstico apenas por exame complementar ou mesmo creem que possam ser portadores de uma lesão cerebral grave como, por exemplo, um tumor. O paciente sem orientação adequada, dificilmente estabelece vínculo terapêutico, condição fundamental para conduzir a retirada do uso excessivo de analgésicos.

A interrupção do abuso de medicamentos é fundamental para o sucesso terapêutico(25). Analgésicos simples, ergotamina, triptanos e as combinações de analgésicos devem ser descontinuados abruptamente. Opioides devem ser retirados de forma gradual no período de um mês. Ressalta-se que os anti-inflamatórios não esteroides são considerados drogas com menor risco para causarem cefaleia por abuso de medicamentos e, portanto, podem ser úteis no tratamento das crises que ocorrem no período de retirada do abuso(23). Um estudo duplo-cego controlado com placebo avaliou o efeito de 100 mg/dia de prednisona por cinco dias na duração da cefaleia que ocorre no período de retirada(26). Observou-se uma redução significativa nesse parâmetro no grupo tratado com prednisona, confirmando observações anteriores derivadas de séries de casos ou estudos não controlados(26). Assim, em nosso serviço, em paralelo à suspensão do medicamento relacionado ao abuso, frequentemente prescrevemos prednisona na dose de 1 a 2 mg/kg/dia durante cinco dias.

Em geral, a maior parte dos pacientes tolera bem a retirada dos medicamentos em regime ambulatorial. Porém, até 30% dos pacientes não retornam a um padrão episódico de dor, causa frequente de reincidência no abuso e falha terapêutica(18). Em casos específicos, como na presença de abuso de grandes quantidades de opioides ou na vigência de sintomas intensos de descontinuação que incluem náuseas, vômitos, hipotensão e taquicardia, a internação pode ser necessária(24).

O tratamento profilático deve ser iniciado concomitantemente à suspensão do abuso medicamentoso. A escolha terapêutica deve basear-se no tipo de cefaleia subjacente à CCD. Desse modo, pacientes com a clínica sugestiva de migrânea devem ser tratados com a medicação profilática específica, o mesmo ocorrendo para os portadores de cefaleia do tipo tensional. Diante da gravidade de suas manifestações e da multiplicidade de fatores envolvidos em sua gênese, comumente a migrânea crônica demanda tratamento com múltiplas drogas.

Ainda assim a monoterapia deve ser tentada inicialmente, sobretudo nos casos sem

tratamento prévio adequado do ponto de vista de dosagem e de duração(25) (Tabela 1). Como drogas de primeira linha, têm-se os beta-bloqueadores, os antidepressivos tricíclicos e a flunarizina como segunda linha, o ácido valproico e o topiramato. Metisergida e pizotifeno são considerados como terceira linha, enquanto clorpromazina e quetiapina de quarta. Todos os medicamentos devem ser usados nas doses recomendadas e por tempo adequado, ou seja, pelo período mínimo de oito semanas.

Tabela 1 - Drogas utilizadas no tratamento da migrânea. Modificado do Consenso da Sociedade Brasileira de Cefaleia[27]. Classe I: Evidência proporcionada por pelo menos um ensaio clínico bem desenhado, randomizado, com grupo-controle; Classe II: Evidência proporcionada por pelo menos um estudo clínico do tipo caso-controle ou estudos coorte; Classe III: Evidência proporcionada por especialistas ou estudos não randomizados ou relato de casos

Droga	Posologia (mg/dia) (nº tomadas/dia)	Efeitos adversos	Eficácia	Classe de evidência
Beta-bloqueadores		++		
Propranolol	40 - 240 (2 a 3)	Hipotensão arterial, bradicardia, sonhos vívidos, pavor noturno, insônia, astenia, impotência sexual, broncoespasmo, depressão.	++++	I
Atenolol	25 - 100 (1 a 2)		++++	I
Antidepressivos tricíclicos		++		
Amitriptilina	12,5 - 75 (1 a 3)	Sonolência, ganho de peso, constipação intestinal, taquicardia, secura de mucosas, hipotensão postural, aumento da perspiração, alterações da libido, retenção urinária.	++++	I
Nortriptilina	10 - 75 (1 a 3)		+++	II
Bloqueadores dos canais de cálcio		+++		
Flunarizina	5 - 10 (1)	Sonolência, ganho de peso, depressão, síndromes extrapiramidais, astenia, dores musculares, parestesias.	+++	I
Anticonvulsivantes		++		
Ácido valproico	500-1.500 (2 a 3)	Sonolência, ganho de peso, tremor, alopecia, ataxia, epigastralgia, náuseas, hepatopatia. Efeitos gastrointestinais de maior frequência e intensidade com ácido valproico.	+++	I
Divalproato de sódio	500-1500 (1 a 2)		+++	I
Topiramato	25 - 200 (1 a 3)	Sonolência, parestesias, perda de peso, alterações cognitivas, alterações no paladar, anorexia, diarreia, predisposição a nefrocalcinose.	++	II

A associação de drogas pode ser vantajosa, uma vez que o benefício terapêutico pode ser alcançado com doses menores das medicações e, consequentemente, com menos efeitos colaterais. Ainda que não sejam inequívocas as evidências da literatura, a associação de drogas de primeira linha deve ser inicialmente tentada. A opção mais utilizada é beta-bloqueador (propranolol ou atenolol) associado a antidepressivo tricíclico (amitriptilina ou nortriptilina). O acréscimo da terceira droga, a flunarizina, pode ser considerado nos casos mais graves. No caso de falha terapêutica desse esquema, opta-se por associar uma das drogas de primeira linha com uma de segunda linha. A utilização de drogas de terceira e quarta linha pode ser necessária nos casos de nova falência terapêutica, mas devem ser usadas de forma muito criteriosa, preferencialmente sob a supervisão de um especialista, dados os graves efeitos colaterais em potencial.

No tratamento da cefaleia do tipo tensional crônica os estudos têm mostrado que a amitriptilina, associada ou não aos relaxantes musculares como carisoprodol e tizanidina, é uma boa alternativa terapêutica. Além disso, como pode haver DTM associada, a avaliação por dentistas ou fisioterapeutas com experiência no manejo da condição pode ser benéfica.

Concluindo, a CCD é uma síndrome clínica e não um diagnóstico específico, sendo uma causa comum de demanda por atendimento médico. Estabelecer o diagnóstico correto e utilizar as alternativas terapêuticas disponíveis de forma integrada são alternativas

viáveis para a melhora clínica dos pacientes.

Bibliografia

1. Silberstein SD, Lipton RB. Chronic daily headache. Curr Opin Neurol, 2000 13(3):277-283.
2. Headache classification committee of the international headache society - the international classification of headache Disorders: 2nd edition. Cephalalgia, 2004 24(Suppl 1):9-160.
3. Jevoux CC, Moreira Filho PF, Souza JA. Cefaleia crônica diária primária: Características Clínicas. Arq Neuropsiquiatr. 1998 56(1):64-68.
4. Bigal ME, Lipton RB, Tepper SJ, Rapoport AM, Sheftel FD. Primary chronic daily headache and its subtypes in adolescents and adults. Neurology, 2004 63(5):843-847.
5. Costa EAC. Comorbidades psiquiátricas na migrânea com e sem abuso de medicações analgésicas [dissertação]. Belo Horizonte: Universidade Federal de Minas Gerais 2007.
6. Silva-Júnior AA, Faleiros BE, Santos TM, Gómez, RS, Teixeira, AL et al. Relative Frequency of Headache Types: A Longitudinal Study in the Tertiary Care. Arqu Neuropsiquiatr (no prelo).
7. Silva-Júnior AA, Costa EC, Gomes JB, et al. Chronic Headache and Comorbibities: A Two-Phase, Population-Based, Cross-Sectional Study. Publish Online: Feb 12 2010. DOI: 10.1111/j.1526-4610.2010.01620.
8. Bigal ME, Rapoport AM, Tepper SJ, Sheftell FD, Lipton RB. The classification of chronic daily headache in adolescents—a comparison between the second edition of the international classification of headache disorders and alternative diagnostic criteria. Headache, 2005 45(5):582-589.
9. Colas R, Munoz P, Temprano R, Gómez C, Pascual J. Chronic daily headache with analgesic overuse: epidemiology and impact on quality of life. Neurology, 2004 62(8):1338-1342.
10. Lanteri-Minet M, Auray JP, El Hasnaoui A, et al. Prevalence and description of chronic daily headache in the general population in France. Pain, 2003 102(1-2):143-149.
11. Krymchantowski AV, Moreira filho PF. Cefaleia crônica diária primária: apresentação clínica. Arq Neuropsiquiatr, 2000 58(2B):437-451.
12. Srikiatkhachorn A, Phanthumchinda K. Prevalence and clinical features of chronic daily headache in a headache clinic. Headache, 1997 37(5):277-280.
13. Vasconcelos LPB, Stancioli FG, Leal JC, et al. Cefaleias em serviço especializado. Migrâneas & cefaleias, 2006 9(1):4-7.
14. Stancioli FG, Vasconcelos LP, Leal JC, et al. Cefaleia crônica diária. Rev Bras Med. 2007 64:5-10.
15. Weiller C, May A, Limmroth V, et al. Brain stem activation in spontaneous human migraine attacks. Nature Med 1995 1:658-660.
16. Silberstein SD, Lipton RB. Chronic daily headache including transformed migraine, chronic tension-type headache, and medication overuse. In: Silberstein SD, Lipton RB, Dalessio DJ, eds. Wolff's Headache and Other Head Pain. 7th ed. New York: Oxford University Press, 2001. p.247-82.
17. Mathew NT, Reuveni U, Perez F. Transformed or evolutive migraine. Headache. 1987 27:102-106.
18. Volcy-Gómez M. Cefalea crónica diaria: II. Tratamento. Rev Neurol. 2005 40(3):180-187.
19. Olesen J, Bousser MG, Diener HC, et al. New appendix criteria open for a broader concept of chronic migraine. Cephalalgia, 2006 26(6):742-746.
20. Silberstein SD. Chronic daily headache. J Am Osteopath Assoc, 2005 105(4 Suppl 2): 23S-29S.
21. Pini LA, Bigarelli M, Vitale G, Sternieri E. Headaches associated with chronic use of analgesics: a therapeutic approach. Headache. 1996 36:433-439.
22. Bigal ME, Sheftell FD, Rapoport AM, Tepper SJ, Lipton RB. Chronic daily headache: identification of factors associated with induction and transformation. Headache, 2002 42(7): 575-581.
23. Dodick DW. Clinical practice. Chronic daily headache. N Engl J Med, 2006

354(2):158-165.
24. Katsarava Z, Fritsche G, Muessig M, Diener HC, Limmroth V. Clinical features of withdrawal headache following overuse of triptans and other headache drugs. Neurology, 2001 57(9): 1694-1698.
25. Saper JR, Dodick D, Gladstone JP. Management of chronic daily headache: challenges in clinical practice. Headache, 2005 45(Suppl 1):S74-85.
26. Pageler L, Katsarava Z, Diener HC, Limmroth V. Prednisone in the treatment of medication withdrawal headache following medication overuse headache: a placebo-controlled, double-blind, and randomized pilot study. Cephalalgia, 2004 24(1):72.

3 OBJETIVOS

3.1 Objetivo geral

Comparar as características sociodemográficas e as frequências das cefaleias primárias, além da prevalência de disfunções têmporo-mandibulares (DTM) nos casos de CCD na população da cidade de Capela Nova-MG, com os casos atendidos no Ambulatório de Cefaleias da Universidade Federal de Minas Gerais (AmbCef-UFMG).

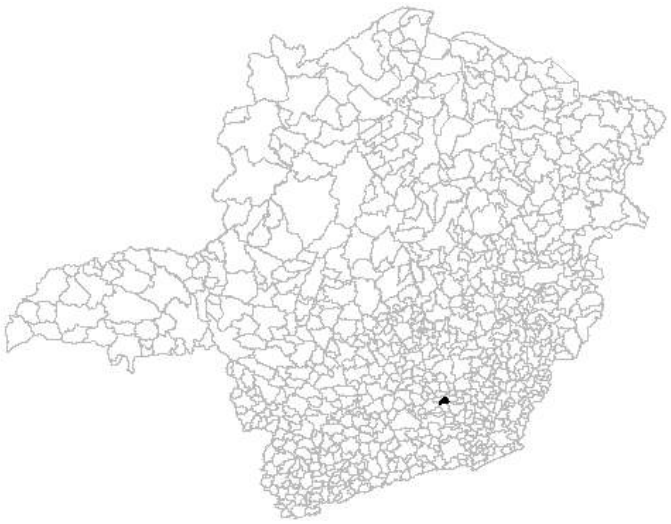
3.2 Objetivos específicos

- Estabelecer a prevalência de cefaleia e suas associações sociodemográficas em toda a população urbana da cidade de Capela Nova-MG.
- Determinar a prevalência da CCD em toda a população da cidade e investigar a presença de DTM nesses casos.
- Definir a prevalência e as associações sociodemográficas da migrânea e CTT numa amostra da população da cidade.
- Identificar o impacto da migrânea na qualidade de vida e compará-lo com o da CTT nessa amostra.
- Estabelecer a frequência da migrânea, CTT e CCD no AmbCef-UFMG.
- Investigar a presença de DTM nos casos de CCD nesse ambulatório.
- Comparar o perfil sociodemográfico, a frequência das cefaleias e a prevalência de DTM nos moradores com CCD de Capela Nova com os pacientes com CCD do AmbCef-UFMG.
- Comparar o perfil sociodemográfico e a frequência de migrânea, CTT entre a amostra de moradores de Capela Nova e dos pacientes atendidos no AmbCef-UFMG.

4 MÉTODOS

A cidade de Capela Nova fica próximo da Serra da Mantiqueira, em Minas Gerais, cerca de 150 quilômetros da capital do estado, Belo Horizonte. Até 2008, o acesso ao município era feito necessariamente por estradas de “terra”, ou seja, sem cobertura asfáltica. A população urbana da cidade girava em torno de 2.066 habitantes segundo o censo populacional anterior do Instituto Brasileiro de Geografia e Estatística (IBGE, 2000)[37]. A posição do município no estado de Minas Gerais e a foto aérea da praça central da cidade estão representadas nas FIG. 2 e 3, respectivamente.

FIGURA 2 - Posição do município de Capela Nova
em relação ao estado de Minas Gerais



Fonte: http://www.ibge.gov.br[37].

FIGURA 3 - Foto aérea da praça central
da cidade de Capela Nova-MG

Fonte: Prefeitura de Capela Nova-MG.

O Programa de Saúde da Família (PSF) local tinha ampla cobertura e mantinha visitas regulares de agentes comunitários de saúde a todos os 556 domicílios da cidade. Esses agentes foram treinados pelo pesquisador responsável (AASJ) para aplicarem questionário sobre a vigência e frequência de cefaleia. Para avaliar a adequação do treinamento, foram feitas verificações de algumas entrevistas realizadas escolhidas por sorteio.

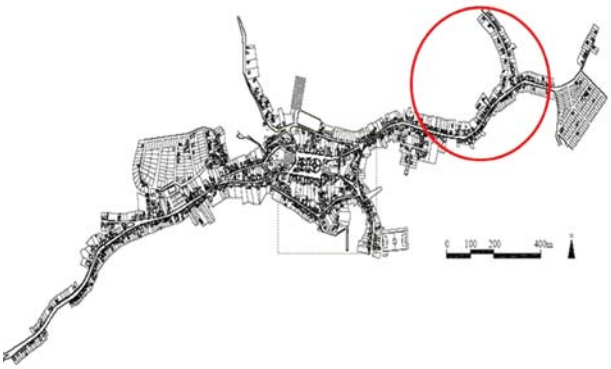
No período de setembro a novembro de 2005, todos os moradores acima de 10 anos de idade foram inquiridos sobre a ocorrência de cefaleia nos 12 meses que antecederam a entrevista e sua frequência nos últimos três meses. Consideraram-se como moradores as pessoas que dormiam no domicílio. O questionário utilizado continha um cabeçalho (sexo, idade, estado civil e escolaridade) e as questões: “você teve dor de cabeça nos últimos 12 meses?” “Qual a frequência nos últimos três meses?” Os indivíduos que relataram a ocorrência de cefaleia por 15 dias ou mais por mês foram convidados para avaliação neurológica, odontológica e fisioterápica. A avaliação neurológica foi realizada por três neurologistas especialistas em cefaleia, seguindo protocolo de avaliação clínica desenvolvido para este estudo, denominado Procefaleia (APÊNDICE A). Foi investigado semiologicamente cada tipo de cefaleia relatada, ou seja, no caso de um indivíduo ter mais de um tipo de cefaleia, o procedimento

adotado foi iniciar a pesquisa pela mais incapacitante, seguida da caracterização semiológica dos outros tipos. Os diagnósticos das cefaleias seguiram os critérios da ICDH-2004[8]. A avaliação odontológica e fisioterápica consistiu na investigação de sintomas relacionados à DTM e da palpação da musculatura pericraniana e cervical. Os critérios diagnósticos para DTM foram os do RDC[14]. As avaliações ocorreram entre dezembro de 2005 e março de 2006.

Após o inquérito populacional, foi sorteada uma das seis microrregiões censitárias da cidade visitadas pelos agentes comunitários de saúde, para compor a amostra de estudo da migrânea e cefaleia do tipo tensional. Nela todos os moradores que afirmaram ter tido cefaleia, independentemente da frequência, no ano anterior à pesquisa foram convidados para avaliação neurológica. Os indivíduos diagnosticados com migrânea responderam ao questionário *Migraine Disability Assessment Scale* (MIDAS)[38], além de outros questionários para avaliação de impacto, também aplicados aos moradores com cefaleia do tipo tensional: *HeadacheImpact Test* (HIT)[39]; *Medical Outcome Study Short Form 36 item Survey* (SF-36)[40]; e *Beck Depression Inventory* (BDI)[41].

As avaliações ocorreram no posto de saúde do município ou no próprio domicílio, conforme a disponibilidade do morador, nos primeiros meses de 2006. A FIG. 4 mostra a planta cadastral de Capela Nova com a indicação da região selecionada para compor a amostra. O desenho linear ocorreu porque a origem da cidade foi na praça central e seu crescimento foi na direção dos caminhos que levavam a ela.

FIGURA 4 - Planta cadastral do município de Capela Nova-MG



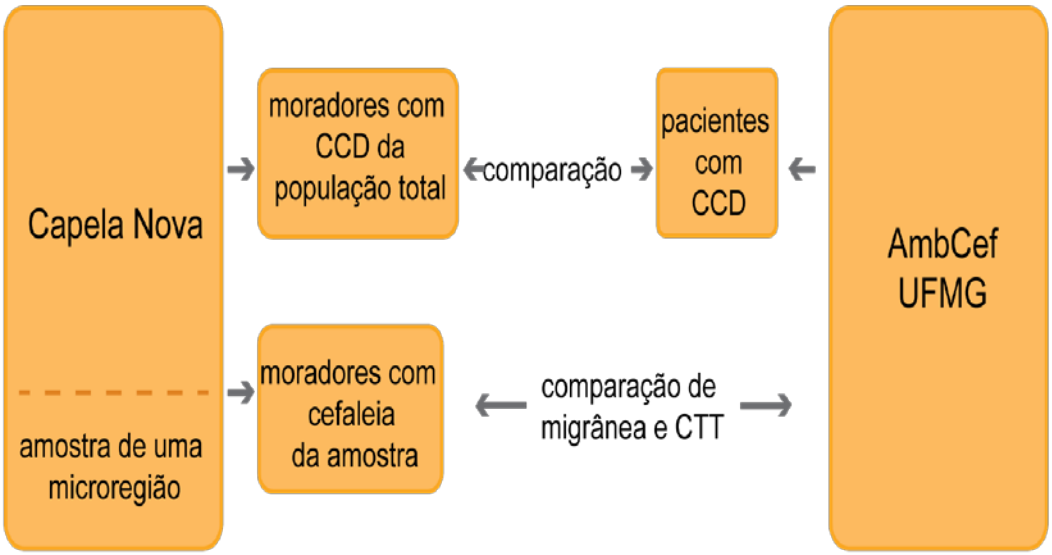
Fonte: Prefeitura de Capela Nova –MG.

O AmbCef-UFMG é um serviço de referência terciário. A marcação de consultas é feita a partir de triagem dos casos feita por médicos no ambulatório de Neurologia geral. Para este estudo, foram avaliados consecutivamente todos os pacientes atendidos de fevereiro a maio de 2011 no AmbCef-UFMG. Inicialmente, foi realizada avaliação neurológica e a(s) cefaleia(s) foram diagnosticadas seguindo os critérios da ICDH-2004. Os indivíduos que apresentavam dor com frequência superior ou igual a 15 dias por mês, há pelo menos três meses, também passaram por avaliação odontológica. O diagnóstico das DTM também foi estabelecido pelos critérios do RDC.

Foram feitas duas comparações. Primeiro, dos dados sociodemográficos, frequência dos tipos diagnósticos de cefaleia e prevalência de DTM entre moradores de Capela Nova e os pacientes do ambulatório com quadro de CCD. A segunda comparação foi feita com os dados sociodemográficos e frequência no diagnóstico de migrânea e cefaleia do tipo tensional entre a amostra de moradores da região da cidade escolhida (FIG. 4) com toda a casuística de pacientes atendidos no Amcef-UFMG no período da coleta, em 2011.

O diagrama da FIG. 5 representa o método utilizado nas comparações.

FIGURA 5 – Fluxograma da metodologia utilizada nas comparações



4.1 Análise estatística

Os dados obtidos foram transcritos para o Epi-info 2000 por digitador profissional e conferidos pelo pesquisador responsável. Para a análise dos dados utilizou-se o *software Statistical Package for Social Sciences* (SPSS) 12.0.

As estimativas de prevalências dos tipos de cefaleia na comunidade e das frequências dessas cefaleias no ambulatório foram apresentadas com o intervalo de confiança de 95% (IC 95%). Nas comparações, foi adotado grau de significância de 5%.

A associação entre ocorrência de cefaleia, migrânea e CTT e as demais variáveis categóricas foi estudada pelos testes Qui-quadrado de Pearson e exato de Fisher.

As características sociodemográficas foram investigadas por análise descritiva: as variáveis nominais, pela distribuição de frequências; e as contínuas, pelas medidas de tendência central e pela variabilidade. Para a avaliação do papel dessas variáveis na ocorrência de cefaleia na comunidade usou-se análise de regressão logística binária entre as variáveis preditoras e a ocorrência de cefaleia. Foram consideradas variáveis preditoras as que tiveram p-valor inferior a 0,15. Foi estimada a *odds ratio* com seu intervalo de 95%. Para avaliar o ajuste do modelo foi utilizado o teste de Hosmer e Lemeshow[42].

As avaliações de impacto feitas pelos questionários HIT e MIDAS foram apresentadas por distribuição de frequência com os respectivos graus de incapacidade. A comparação dos escores do SF-36 e do BDI entre os indivíduos com migrânea e cefaleia do tipo tensional foi feita com o teste não paramétrico de Mann-Whitney.

Para avaliar a diferença entre os grupos comparados (comunidade e ambulatório) também foi utilizado o teste Qui-quadrado de Pearson, o mais apropriado para comparação de proporções. Quando necessário, utilizou-se o teste exato de Fisher, adequado para comparação de proporções em amostras com reduzidas frequências. Na análise de variáveis contínuas também foi empregado o teste não paramétrico de Mann-Whtiney.

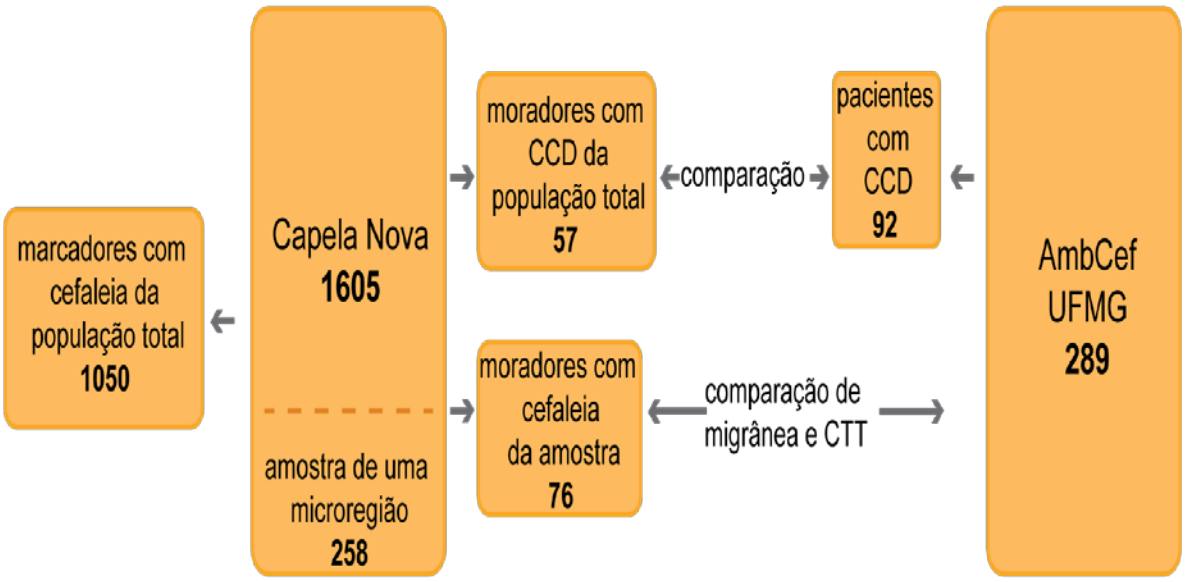
4.2 Aspectos éticos

O estudo foi delineado de acordo com as diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos (Resolução 196/1996 do Conselho Nacional de Saúde). O projeto de pesquisa e o Termo de Consentimento Livre e Esclarecido foram primeiro aprovados pelo Comitê de Ética em Pesquisa com Seres Humanos, da Universidade Federal Fluminense, em 17/08/2005, sob o registro número 123/05 e, posteriormente, pelo Comitê de Ética da Universidade Federal de Minas Gerais, em 13/01/2011, sob o registro número 500/2010 (ANEXO A). Todos os entrevistados foram informados dos objetivos da pesquisa e assinaram o termo antes da aplicação do questionário (APÊNDICE B).

5 RESULTADOS

A FIG. 6 representa o tamanho amostral de cada grupo investigado.

FIGURA 6 – Tamanho da amostra dos grupos avaliados



5.1 Artigo 2

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Brief Communication

Prevalence of Headache on the Entire Population of a Small City in Brazil

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Objective.—To estimate the 1-year prevalence of headache, using face-to-face interviews of the entire population of a city in Brazil.

Methods.—This was a cross-sectional, population-based study. We conducted face-to-face interviews of all individuals older than 10 years, in a town (Capela Nova) in Brazil. Prevalence of the headache was estimated using prevalence ratios, adjusted by gender, age, marital status, and level education.

Results.—The estimated 1-year prevalence of any headache was 65.4%. Headache was 1.5 times more prevalent in women and individuals aged 20 and 29, but less prevalent in the elderly and divorced. There was not association with the level of education.

Conclusions.—From a public healthcare perspective, headache should be seen as hypertension and diabetes, and actively screened and treated.

Key words: headache, epidemiology, public health

(*Headache* 2009;••:••-••)

The epidemiology of headaches has been extensively studied over the past 50 years,[1-3] and contributed to the understanding that headaches are a worldwide public health problem.[4] According to the World Health Organization (WHO), migraine figures among the 20 top causes of disability for both genders,[5] which motivated the WHO, in collaboration with the World Headache Alliance and other organizations (International Headache Society, European Headache Federation) to launch the "Lifting The Burden" initiative.[5,6] The first step of this initiative was to assess and document the epidemiology and the burden of headaches worldwide. It was found that the mean prevalence of headaches was 46%, ranging from 20% in Zimbabwe to 91% in North America.[7] These data show that the importance of the headaches is underestimated and the headaches remain under-recognized and under-treated around the world, especially in emerging (Russia, China, Brazil, and India) and under-developed countries.[5,6]

In Brazil, population-based studies on this topic are scarce.[1] In a recent study, the 1-year prevalence of

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Conflict of Interest: None.

any headache was 80.8%; headaches were more common in women; for both genders, prevalence was higher between the second and fourth decade of life.[8] Nonetheless, the health programs from the Brazilian public health system, which are reasonably effective in the prevention of other chronic disorders (hypertension and diabetes), have not been used in the diagnosis and treatment of headaches.[9] In small cities, family health programs are often in place, but with no coverage for headaches. Accordingly, herein we explored the epidemiology of headaches in a city covered by this program in an attempt to estimate the feasibility of its use for the population management of headaches. We estimated the 1-year prevalence of headache in general and by demographics within the entire population of a city covered by this program (Capela Nova, Minas Gerais, Brazil).

METHODS

This was an observational, cross-sectional, population-based study. Capela Nova is a small town in the southeastern region of Brazil. According to the 2000 Brazilian Census, its population was 2066 inhabitants (1631 over the age of 10 years old). On a municipal level, the public health system has a Family Health Program (FHP), which is a basic-health assistance program. The FHP is carried out by teams composed of doctors, nurses, and trained health agents. The agents are responsible for visiting every home in the town, screening and carrying out preventive actions for major health problems. In most small towns where the FHP is implanted, the program has been successful. In Capela Nova, where the study was conducted, the program is well implanted and offers good population coverage. Thus, the town's 556 households are regularly visited, on a monthly basis, by the agents.

For this study, the FHP agents were trained by one of us (A. J.) on how to apply questionnaires that screened for the occurrence of headaches in the past year. To assess the adequacy of the training, we randomly supervised selected interviews made by the agents.

The study was conducted from October 2005 to January 2006. The agents visited all homes in the town, and screening for headaches using the following question: "Have you had any headache episode over the last 12 months?" In addition, gender, age, marital status, and educational level of the respondents were also recorded. All individuals older than 10 living in the home were considered eligible for the research. Agents were told to return up to 5 times to any home in order to ensure that all residents had answered the questionnaires.

Statistical Analysis.—The data obtained were transcribed to the Epi-info/2000 software (Centers for Disease Control Atlanta, GA, USA). To analyze the data the SPSS 12.0 software (SPSS Inc., Chicago, IL, USA) was used. The 1-year prevalence rates were calculated, and the 95% confidence intervals (CI) were estimated, overall and by demographics. Age was divided into 6 categories: 10-19, 20-29, 30-39, 40-49, 50-59, and over 60. Marital status was grouped as: single, married, divorced, and widowed. Education level was categorized by years of school: 4 years, between 5 and 9 years, and college. Demographics were compared using the Pearson's chi-square test.

The degree of the association was estimated using logistic regression, with 95% CI. Statistical significance was defined as $P < .05$. To assess the adjustment of the model, the Hosmer and Lemeshow's test was used.

This study was approved by the local ethics research committee. All individuals interviewed were informed of the research goals and signed the consent form. In the case of children, the consent form was signed by their parents.

RESULTS

Our sample consists of 1605 individuals (837 women). A total of 26 subjects refused to answer, were not met, or were unable to answer the question. Thus, 98.4% of the target population participated in this study. Age varied from 10 to 93 years old (mean ± SD; 40.1 ± 19.0). The vast majority were single (40.9%) or married (47.9%). Most attended elementary school.

The estimated 1-year prevalence of headaches among the respondents was 65.4% (95% CI = 63.0%-67.7%). As displayed in Table 1, prevalence was higher in women (69.5% vs 60.9%, $P < .05$), in those

Table 1.—Demographic Characteristics in Individuals With and Without Headaches

	Headache		
	No	Yes	*P* value
Marital status			
Single	225	431	<.001
	34.3%	65.7%	
Married	254	515	
	33.0%	67.0%	
Widowed	54	84	
	39.1%	60.9%	
Divorced	17	4	
	81.0%	19.0%	
Gender			
Men	300	468	<.001
	39.1%	60.9%	
Women	255	582	
	30.5%	69.5%	
Education			
<4 years	448	806	.040
	35.7%	64.3%	
5-9 years	89	185	
	32.5%	67.5%	
High school	16	57	
	21.9%	78.1%	
Age			
10-19	98	179	<.001
	35.4%	64.6%	
20-29	66	185	
	26.3%	73.7%	
30-39	81	192	
	29.7%	70.3%	
40-49	97	210	
	31.6%	68.4%	
50-59	79	129	
	38.0%	62.0%	
60+	134	148	
	47.5%	52.5%	

Teste Qui-quadrado de Pearson.

aged from 20 and 29 (73.7%), and in those who at least completed high school (78.1%).

As described in the methods, all the demographic variables studied were included in the multivariate model. According to the model, headaches were 1.5 times more common in women than in men. A similar ratio was seen in those 20-29, as compared with the ages of 10-19. Individuals older than 60 were 50% less likely to report headaches than younger participants. As for the marital status, married individuals were 1.2 times more likely to report headaches than single individuals, although the difference was not significant (95% CI = 0.92-1.59). In our sample, divorced individuals were less likely to suffer from headaches, but the sample is small for this group. Education was not significant in the final model. The model showed adequate fit (value $P = .692$). Data are presented in Table 2.

DISCUSSION

To the best of our knowledge, this is the first epidemiological study of headache evaluation that included the entire population of a Brazilian town. The 1-year headache prevalence was 65.4% (69.5% female, 60.9% male); therefore, this rate was relatively close to what had been found in the Brazilian population (80.8%).[8] However, as if we compare it with other Brazilian and foreign studies, it can be noticed that there are wide discrepancies in the results found around the world. It is difficult to ascertain the reasons for such variation. Possibly cultural and ethnic differences in each region, associated with the methodological variation of the studies can account for it.

On the other hand, studies have shown a good standardization in the association of headache occurrence with 2 sociodemographic factors, ie, gender and age group. Headaches are more prevalent in women and in the second to fourth age group in both genders, and become less common after the age of 60.[10] Our study also found these demographic differences.

We emphasize that we just screened for headaches. Therefore, we included both tension-type headaches and migraine. The prevalence of migraine varies as a function of biological factors (gender and age) and cultural factors,[10-12] which may explain why the prevalence of headache, as a function of demographics, varies so broadly in different studies.[13-16]

In our study, marital status and high level of education were associated with headaches in unadjusted analyses. However, after adjustments, the variables did not remain significantly associated, probably representing confounding factors. We found that headaches were less prevalent in divorced individuals. Yet, very few individuals (26) in our sample were divorced. Therefore, the finding may be an artifact.

Table 2.—Multivariate Analysis in Individuals With Headache

				OR (95% CI)	
	Beta	*P* value	OR	Inferior limit	Superior limit
Marital status					
Single			1.00		
Married	0.19	.172	1.21	0.92	1.59
Widowed	0.17	.456	1.19	0.75	1.88
Divorced	–2.14	.000	0.12	0.04	0.36
Gender					
Men			1.00		
Women	0.41	.000	1.51	1.22	1.88
Age					
10-19			1.00		
20-29	0.40	.042	1.49	1.01	2.19
30-39	0.20	.316	1.22	0.82	1.82
40-49	0.09	.658	1.09	0.73	1.63
50-59	–0.23	.292	0.79	0.52	1.22
60+	–0.62	.004	0.54	0.35	0.82

The participation rate in our study was very high (98.4%) when compared with the rates from other studies.[17-19] The high rate of participation is probably explained by the fact that interviews were conducted by the FHP, which are known by the population and routinely visit them.

Several limitations are to be mentioned. First, variables such as income, the practice of physical activities, health habits, and index of body mass were not measured. In addition, the inclusion of other variables would make the questionnaire to be somewhat lengthy and as such we chose to restrict it to questions, which we deemed more pertinent. Another limitation was the nonvalidation of the questionnaire. However, it seemed that the use of a face-to-face questionnaire with a previously trained interviewer, asking a relatively simple question, was indeed adequate. Finally, we point out that in this study, we just assessed the symptom headache, not headache disorders, such as migraine or tension-type headaches. Indeed, this study should be seen as a pilot study to assess the feasibility of using the FHP in screening for headaches. In a separate study, we used them to screen for chronic daily headache and brought the cases found to in-person assessment and treatment (data in preparation).

We conclude that the prevalence of headaches in this town was significant. Based on the present data, we proposed to authorities that they encourage preventive healthcare actions using the structure of the FHP. Such strategies should include screening for headaches, referral of patients to public health clinics, and establishment of treatment. Although this study reflects a local reality, similar actions could be adopted in several Brazilian cities and towns, because the FHP is part of the public healthcare system in several municipalities in Brazil. Furthermore, they could be carried in several regions covered by the WHO, lifting the burden initiative.

REFERENCES

1. Lipton RB, Bigal ME. Epidemiology of migraine in Latin America: An editorial. *Headache*. 2005;45:103-104.
2. Lipton RB, Bigal ME. Ten lessons on the epidemiology of migraine. *Headache*. 2007;47(Suppl. 1):S2-S9.
3. Stewart WF, Simon D, Shechter A, Lipton RB. Population variation in migraine prevalence: A meta-analysis. *J Clin Epidemiol*. 1995;48:269-280.
4. Steiner TJ. Lifting the burden: The global campaign against headache. *Lancet Neurol*. 2004;3:204-205.

5. Steiner TJ. Lifting the burden: The global campaign to reduce the burden of headache worldwide. *J Headache Pain*. 2005;6:373-377.
6. Martelletti P, Haimanot RT, Lainez MJ, et al. The Global Campaign (GC) to Reduce the Burden of Headache Worldwide. The International Team for Specialist Education (ITSE). *J Headache Pain*. 2005;6:261-263.
7. Leonardi M, Steiner TJ, Scher AT, Lipton RB. The global burden of migraine: Measuring disability in headache disorders with WHO's Classification of Functioning, Disability and Health (ICF). *J Headache Pain*. 2005;6:429-440.
8. Queiroz LP, Barea LM, Blank N. An epidemiological study of headache in Florianopolis, Brazil. *Cephalalgia*. 2006;26:122-127.
9. Bigal ME, Bigal JO, Bordini CA, Speciali JG. Prevalence and costs of headaches for the public health system in a town in the interior of the state of Sao Paulo. *Arq Neuropsiquiatr*. 2001;59:504-511.
10. Stovner L, Hagen K, Jensen R, et al. The global burden of headache: A documentation of headache prevalence and disability worldwide. *Cephalalgia*. 2007;27:193-210.
11. Stewart WF, Lipton RB, Celentano DD, Reed ML. Prevalence of migraine headache in the United States. Relation to age, income, race, and other sociodemographic factors. *JAMA*. 1992;267:64-69.
12. Scher AI, Bigal ME, Lipton RB. Comorbidity of migraine. *Curr Opin Neurol*. 2005;18:305-310.
13. Sakai F, Igarashi H. Prevalence of migraine in Japan: A nationwide survey. *Cephalalgia*. 1997;17:15-22.
14. O'Brien B, Goeree R, Streiner D. Prevalence of migraine headache in Canada: A population-based survey. *Int J Epidemiol*. 1994;23:1020-1026.
15. Domingues RB, Aquino CC, Santos JG, da Silva AL, Kuster GW. Prevalence and impact of headache and migraine among Pomeranians in Espirito Santo, Brazil. *Arq Neuropsiquiatr*. 2006;64:954-957.
16. Bigal ME, Liberman JN, Lipton RB. Age-dependent prevalence and clinical features of migraine. *Neurology*. 2006;67:246-251.
17. Lanteri-Minet M, Valade D, Geraud G, Chautard MH, Lucas C. Migraine and probable migraine – Results of FRAMIG 3, a French nationwide survey carried out according to the 2004 IHS classification. *Cephalalgia*. 2005;25:1146-1158.
18. Zwart JA, Dyb G, Hagen K, et al. Depression and anxiety disorders associated with headache frequency. The Nord-Trondelag Health Study. *Eur J Neurol*. 2003;10:147-152.
19. Lipton RB, Stewart WF, Diamond S, Diamond ML, Reed M. Prevalence and burden of migraine in the United States: Data from the American Migraine Study II. *Headache*. 2001;41:646-657.

5.2 Artigo 3 -

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Research Submission

Chronic Headache and Comorbibities: A Two-Phase, Population-Based, Cross-Sectional Study

Ariovaldo da Silva Jr, MD; Esther Coelho Costa, MD; João Bosco Gomes, DDS; Frederico Motta Leite, DDS; Rodrigo Santiago Gomez, MD; Luiz Paulo Vasconcelos, MD; Abouch Krymchantowski, MD, PhD; Pedro Moreira, MD, PhD; Antonio Lucio Teixeira, MD, PhD

Background.—Studies using resources of a public family health program to estimate the prevalence of chronic daily headaches (CDH) are lacking.

Objectives.—To estimate the 1-year prevalence of CDH, as well as the presence of associated psychiatric and temporomandibular disorders (TMD) comorbidities, on the entire population of a city representative of the rural area of Brazil.

Methods.—This was a cross-sectional, population-based, 2-phase study. In the first phase, health agents interviewed all individuals older than 10 years, in a rural area of Brazil. In the second stage, all individuals who reported headaches on 4 or more days per week were then evaluated by a multidisciplinary team. CDH were classified according to the second edition of the International Classification of Headache Disorders (ICHD-2). Medication overuse headache was diagnosed, as per the ICHD-2, after detoxification trials. Psychiatric comorbidities and TMD were diagnosed based on the DSM-IV and on the Research Diagnostic Criteria for Temporomandibular Disorders criteria, respectively.

Results.—A total of 1631 subjects participated in the direct interviews. Of them, 57 (3.6%) had CDH. Chronic migraine was the most common of the CDH (21, 36.8%). Chronic tension-type headache (10, 17.5%), medication overuse headache (13, 22.8%) and probable medication overuse headache (10, 17.5%) were also common. Psychiatric disorders were observed in 38 (67.3%) of the CDH subjects. TMD were seen in 33 (58.1)% of them.

Conclusions.—The prevalence of CDH in the rural area of Brazil is similar to what has been reported in previous studies. A significant proportion of them have psychiatric comorbidities and/or TMD. In this sample, comorbidities were as frequent as reported in convenience samples from tertiary headache centers.

Key words: headache, epidemiology, chronic daily headache, comorbidities, temporomandibular disorders

(*Headache* 2010;50:1306-1312)

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Accepted for publication December 11, 2009.

Conflict of Interest: None

Primary chronic daily headaches (CDH) of long duration include a heterogeneous group of headache disorders characterized by daily or nearly daily headaches.[1,2] It is the most common diagnosis in headache specialty care centers.[3,4] Among its subtypes, 2 represent the chronification of previously episodic disorders (chronic migraine [CM] and chronic tension-type headache [CTTH]), while 2 other begin *de novo* (hemicrania continua and new daily persistent headaches).[1,5]

Although the classification of CDH is controversial,[1] it is now possible to classify all its subtypes using the second edition of the International Classification of Headache Disorders (ICHD-2).[2] Nonetheless, the ICHD-2 criteria for CDH are relatively complex for use in epidemiological studies, specially regarding the differentiation of CM and medication overuse headache (MOH).[3,4] One alternative is to conduct direct medical assessments in individuals with frequent headaches.[5]

Certain comorbidities may increase the risk of developing CDH.[6-8] Diagnosing these disorders is also cumbersome (eg, temporomandibular disorders, TMD), and sometimes difficult to be performed using questionnaires.[9,10] Ideally, the assessment of CDH requires a multidisciplinary team. These assessments are expensive and time consuming, therefore not easy to be conducted in population studies.

Some of these caveats can be addressed in countries with universal public health systems. In Brazil, the system is reasonably effective in the screening for chronic disorders (hypertension and diabetes), although it has not been used in the diagnosis and treatment of headaches.[11] Furthermore, in some small cities and rural areas, a family health program (FHP) is in place, using health agents to screen for diseases, and multidisciplinary teams to treat them. We have demonstrated that this system can be used to screen for headaches, and to refer headache suffers for medical care.[12] Accordingly, herein we take advantage of this program, to estimate the 1-year prevalence of the CDH within the entire population of a city covered by it (Capela Nova, Brazil). We also assessed potentially comorbid conditions, such as psychiatric disorders and TMD.

METHODS

This was an observational, cross-sectional and population-based study conducted in 2 phases. Capela Nova is a small town in southeastern Brazil, and according to the 2000 Brazilian Census, had 2066 inhabitants (1631 of whom over the age of 10). The Brazilian public health system on a municipal level is based on the FHP, where health agents make routine in-home visits and refer identified health problems to a multidisciplinary medical team.

Details of this program and of the adequacy of the health agents to screen headache were described elsewhere.[12] In brief, in the city where the study was conducted, the program has wide and comprehensive coverage, and all 556 houses of the town are regularly visited monthly by the health agents. Accordingly, in the first phase of our study (screening phase), trained FHP agents screened for the occurrence of headaches using the following question: "Have you had any headache episode over the last 12 months?" Those who answered positively were then asked about how many headaches they had in a typical week. Individuals with headaches on 4 or more days per week were then invited to come to the clinic for in-person assessments.

At the assessment phase (Phase 2), they were first evaluated by a neurologist with expertise in headaches, using a semi-structured questionnaire. The headaches (including probable MOH) were classified by the ICHD-2.[2] CM was classified as per the ICHD-2R.[13] Individuals who fulfilled diagnosis of probable MOH were then recommended to restrict the use of analgesics, and were reassessed 2 months later, when a final diagnosis was assigned. The neurological assessments happened from December of 2005 to March of 2006. At the same time, individuals were also assessed for psychiatric conditions and for orofacial pain. Psychiatric assessments were performed by a psychiatric with expertise on applying the Mini International Neuropsychiatric Interview (M.I.N.I.), and consisted of a structured clinical interview.[14] Diagnosis was based on DSM-IV-TR.[15] The orofacial assessment was conducted by specialists in TMD (dentist and physical therapist), who first obtained information using a semi-structured interview and clinical examination, followed by thorough

examination of the temporomandibular joint, of the masticatory system, and of the facial and neck muscles. TMD diagnoses were based on the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) criteria.[12,16]

Statistical Analyses.—Herein we describe the epidemiology of CDH subtypes by social demographic characteristics. The 1-year prevalence rates were calculated overall and by demographics. Age was divided into 6 categories: 10-29, 30-39, 40-49, 50-59, and over 60. Marital status was grouped as: single, married, divorced, and widowed. Education level was categorized by years of school: 4 years or less, between 5 to 9 years, and 9 years or more.

Demographics were compared using Pearson's chi-squared test. We also describe comorbid diagnosis as a function of the CDH diagnosis.

To analyze the data the SPSS 12.0 software was used. The data obtained were transcribed to the Epi-info/2000 software.

This study was approved by the Research Ethics Committee of the Fluminense Federal University, Brazil. All individuals interviewed were informed of the research goals and signed the consent form. In the case of children, the consent form was signed by their parents.

RESULTS

Our sample consisted of 1605 individuals (837 women). A total of 26 subjects refused to answer, were not met, or were unable to answer the screening question. Thus, 98.4% of the target population participated in this study. Age varied from 10 to 93 years (mean = 40.1 ± 19). Most were single (40.9%) or married (47.9%) and attended elementary school.

Of them, 60 individuals had headache on 4 or more days per week, and 57 completed the neurological evaluation for a 1-year prevalence of CDH of 3.6%. Prevalence of CDH was higher in women (5.7%) than in men (1.2%). Prevalence by age and gender is displayed in Table 1.

Prevalence increased by age until the age of 50-59, and varied from 1.8% to 8.2%. In older than 60, prevalence was 3.9%. For women, prevalence peaked in the ages of 40-49, while in men the peak happened from 30-39 years.

Table 1.—Prevalence of Chronic Daily Headaches (CDH) in Our Sample, Stratified by Gender and Age

	Sample	CDH cases	Prevalence (%)
	1605	57	3.6
Gender			
Male	768	9	1.2
Female	837	48	5.7
Age (years)			
10-19	284	5	1.8
20-29	251	8	3.2
30-39	273	11	4.0
40-49	307	14	4.6
50-59	208	17	8.2
60+	282	11	3.9

Among the individuals participating in the neurological assessment (57), 43 had clear migraine attacks superimposed (75.4%). A formal diagnosis of CM (according to the revised criteria of the ICHD-2) was given to 21 of them (36.8%), while MOH happened in 14 (24.6%). In 8, the final diagnosis could not be assigned, as detoxification did not succeed. Therefore, their final diagnosis was probable MOH.

Chronic tension-type headache was the second most prevalent type of CDH. It was diagnosed in 10 individuals; another 3 had CTTH and MOH. Just one individual had CDH attributed to cervicogenic headache. Diagnoses are displayed in Table 2.

Among the 57 individuals with CDH, 53 were assessed by a psychiatrist. Over two-thirds (67.3%) had any psychiatric disorder. The most common problem was generalized anxiety (38.5%), followed by depressive disorders (32.7%). No significant gender differences were seen (Table 3).

Individuals with CM were more likely to experience psychiatric disorders than those with CTTH; the opposite was seen to TMD, more common in CTTH than in CM. Nonetheless, because of the small sample size, the differences were not statistically significant

As for the TMD, 43 individuals were seen by the orofacial team. Of them, 25 (58.1%) had any type of TMD. In all, trigger points were detected in the masticatory or accessory system (myofascial pain), while 12 had also articular dysfunctions.

Table 2.—Diagnosis of Subjects With Chronic Daily Headaches, According to the Second Edition of the International Classification of Headache Disorders, in the Subsample That Participated in the In-Person Neurological Assessments

Diagnosis	Frequency	Proportion (%)
Migraine features		
Migraine + chronic migraine	21	36.8
Migraine + medication overuse headache	14	24.6
Migraine + probable chronic migraine + probable medication overuse headache	8	14.0
Total	43	75.4
Tension-type features		
Chronic tension-type headache	10	17.5
Episodic tension-type headache + probable episodic tension-type headache + probable medication overuse headache	2	3.5
Chronic tension-type headache + medication overuse headache	1	1.8
Total	13	22.8
Cervicogenic headache	1	1.8
Total	57	100.0

DISCUSSION

Herein we conducted a 2-stage study, where the entire population of a city was screened and cases were then directly interviewed. Two-phase studies are largely used in epidemiology,[17] and herein we indeed assessed the feasibility of using the FHP to screen for CDH and potential comorbidities. The elevated participation rate was certainly yielded by the fact that we used the structure of the FHP to conduct this study. Accordingly, although limitations of our study are relevant (and discussed below), herein we demonstrated the feasibility of using the FHP to screen for CDH, and the importance of using existing multidisciplinary teams to investigate and treat the identified cases. In poor regions of the globe, existing health structures should be used to manage nonlethal conditions, such as headaches, which are sometimes totally neglected.

Table 3.—Distribution of the Psychiatric Diagnoses in Patients With CDH, According to the DSM-IV, in Individuals Who Participated in the Psychiatrical Assessment

	Total	
Psychiatric diagnosis	n	%
Any psychiatric disorder	35	67.3
Major depression	17	32.7
Dysthymia	9	17.3
Phobia	16	30.8
Generalized anxiety disorder	20	38.5
Obsessive compulsive disorder	13	25.0
Eating disorder	1	1.8
Alcohol abuse	2	3.8
Somatization disorder	4	7.7
Suicide ideation	9	17.3
Psychotic disorders	2	3.8
Hypochondriasis	1	1.9
Premenstrual dysphoric syndrome	10	19.2
Total	52	

CDH = chronic daily headache.

Prevalence of CDH in our study was very similar to what is reported in the literature.[16,18,19] A recent nationwide study conducted in Brazil found a prevalence of 7%.[20] Among the possibilities to explain the discrepancy, we must mention that our study is more subject to regional determinants of prevalence (eg, exposures and a less diverse population). Alternatively, the method of ascertainment may have played a role. In the nationwide study, interviews were performed by telephone and the participation was lower (49.9%). It may be hypothesized that individuals with frequent headaches were more likely to participate in the survey. Nonetheless, high prevalence of CDH was also found in 2 local studies in Brazil.[21,22] International data vary largely, from 1.7% in Ethiopia to 4.8% in Denmark.[23] The prevalence of CDH by age and gender were also similar to what is reported elsewhere.[18]

Chronic migraine was the most common diagnosis, followed by CTTH and medication or probable MOH. We have not found cases of hemicrania continua or new daily persistent headaches. This was the first study that used the ICHD-2-R criteria for CM in Brazil.

To the best of our knowledge, no other population-based studies strictly followed the ICHD-2 criteria for MOH, which requires withdrawal of medication to document improvement before assigning a final diagnosis, and this is strength of our study. We did follow the criteria strictly, and found that most individuals remitted into episodic headaches after withdrawal, a finding supported by other publications.[24,25]

Psychiatric disorders were commonly seen in CDH cases, an expected finding.[26-28] Indeed, few studies assessed the relationship of psychiatric comorbidity and CDH in the population. Nonetheless, it has been demonstrated that, compared with episodic headache controls, frequent headache cases had more major life changes in the year before or same year. After adjustments, odds of frequent headaches increased additionally with each antecedent event (odds ratio [OR] 1.20 [1.1, 1.3], $P < .001$).[29]

Temporomandibular disorders were numerically more common in CTTH than in CM, although statistical significance was not achieved. Other studies suggest that TMDs are comorbid with CTTH.[30,31] It may be that muscular involvement in the pericranial muscles links both disorders. TMDs are also frequent in CM as per our data. This is of importance, as TMD may exacerbate migraines.[30-32]

Of interest is that 17.3% of our sample had suicidal thoughts. Although the lack of a control group limits conclusions, figures clearly seem high. Causality cannot be addressed by our study, but it may be that suicidal thoughts are common in individuals with chronic pain.[33,34] Alternatively, suicidal thoughts may only reflect prevalent depression, which is in turn clearly associated with CDHs.[8] Future studies should further explore this topic.

Some limitations of our study should be discussed. First, neither the reliability nor the false negative rates of our screening methods (health agents using standardized questionnaires) was assessed, and only subjects reporting 4 or more headache days per week were interviewed in the second stage of our study. It may be that some of the individuals who reported having 2 or 3 headaches per week would indeed have CDH, and while the second stage of our study confirmed the headache frequency of those with 4 or more headaches per week, the same is not true for those who screened negative. Accordingly, we may have underestimated the prevalence of CDH (by excluding at screening some individuals with CDH). Although the prevalence found by us (3.6%) is very similar to what has been found by other population studies,[16,18] this caveat should be made clear. Another important point is that comorbidities in the episodic headache population were not assessed; therefore, we lack a contemporaneous control for this regard. In this regard our study should be seen as descriptive only. Another potential limitation is that we failed to document preventive medications that might have been initiated by other doctors and that may have facilitated the remission from MOH into episodic headaches. Furthermore, while conducting detailed clinical assessments, we did not capture information of other variables associated with CDH, such as body mass index or sleep disturbances.[35,36] Finally, although one positive component of our study certainly regards the prospective detoxification attempts of individuals with probable MOH, we emphasize that revised criteria for this condition do not require detoxification and are considered to be more reasonable when diagnosing MOH.[5] We suggest that the revised criteria should be used in population studies, as strictly following the original criteria is certainly not an easy task (requiring in-person assessments, intervention, and prospective follow-up). Strengths of this study are the meticulous assessments and the prospective classification on medication overuse.

The FHP seems to be effective in identifying CDH and in bringing them into the medical system. In this rural sample of CDH sufferers, comorbidities were as frequent to what is reported in convenience samples from tertiary headache centers. Accordingly, we suggest that CDH and certain disorders are truly comorbid, ruling out the referral bias that has been suggested as partially explaining these associations.

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REFERENCES

1. Bigal ME, Tepper SJ, Sheftell FD, Rapoport AM, Lipton RB. Chronic daily headache: Correlation between the 2004 and the 1988 International Headache Society diagnostic criteria. *Headache.* 2004; 44:684-691.
2. Headache Classification Subcommittee of the International Headache Society. The International Classification of Headache Disorders, 2nd Edition. *Cephalalgia.* 2004;24(Suppl. 1):1-149.
3. Zwart JA, Dyb G, Hagen K, Svebak S, Holmen J. Analgesic use: A predictor of chronic pain and medication overuse headache: The Head-HUNT Study. *Neurology.* 2003;61:160-164.
4. Meskunas CA, Tepper SJ, Rapoport AM, Sheftell FD, Bigal ME. Medications associated with probable medication overuse headache reported in a tertiary care headache center over a 15-year period. *Headache.* 2006;46:766-772.
5. Silberstein SD, Olesen J, Bousser MG. The International Classification of Headache Disorders, 2nd Edition (ICHD-II)-revision of criteria for 8.2 Medication-overuse headache. *Cephalalgia.* 2005;25: 460-465.
6. Scher AI, Stewart WF, Ricci JA, Lipton RB. Factors associated with the onset and remission of chronic daily headache in a population-based study. *Pain.* 2003;106:81-89.
7. Zwart JA, Dyb G, Hagen K, et al. Depression and anxiety disorders associated with headache frequency. The Nord-Trondelag Health Study. *Eur J Neurol.* 2003;10:147-152.
8. Karakurum B, Soylu O, Karatas M, et al. Personality, depression, and anxiety as risk factors for chronic migraine. *Int J Neurosci.* 2004;114:1391-1399.
9. Dworkin SF, LeResche L. Research diagnostic criteria for temporomandibular disorders: Review, criteria, examinations and specifications, critique. *J Craniomandib Disord.* 1992;6:301-355.
10. Breslau N, Andreski P. Migraine, personality, and psychiatric comorbidity. *Headache.* 1995;35:382-386.
11. Bigal ME, Bigal JO, Bordini CA, Speciali JG. Prevalence and costs of headaches for the public health system in a town in the interior of the state of Sao Paulo. *Arq Neuropsiquiatr.* 2001;59:504-511.
12. da Silva Jr A, Krymchantowski A, Filho PM, Vasconcelos LPB, Gomez RS, Teixeira AL. Prevalence of headache in the entire population of a small city in Brazil. *Headache*. 2009;49:895-899.
13. Headache Classification Committee, Olesen J, Bousser MG, Diener HC, et al. New appendix criteria open for a broader concept of chronic migraine. *Cephalalgia.* 2006;26:742-746.
14. Sheehan DV, Lecrubier Y, Sheehan KH, et al. The Mini-International Neuropsychiatric Interview (M.I.N.I.): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *J Clin Psychiatry.* 1998; 59(Suppl. 20):22-33; quiz 34-57.
15. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders Fourth

Edition (Text Revision) DSM-IV-TR. American Psychiatric Publishing, 2000.
16. Castillo J, Munoz P, Guitera V, Pascual J. Kaplan Award 1998. Epidemiology of chronic daily headache in the general population. *Headache.* 1999; 39:190-196.
17. Kruit MC, van Buchem MA, Hofman PA, et al. Migraine as a risk factor for subclinical brain lesions. *JAMA.* 2004;291:427-434.
18. Scher AI, Stewart WF, Liberman J, Lipton RB. Prevalence of frequent headache in a population sample. *Headache.* 1998;38:497-506.
19. Lipton RB, Bigal ME. Toward an epidemiology of refractory migraine: Current knowledge and issues for future research. *Headache.* 2008;48:791-798.
20. Queiroz LP, Peres MF, Kowacs F, et al. Chronic daily headache in Brazil: A nationwide population-based study. *Cephalalgia.* 2008;28:1264-1269.
21. Queiroz LP, Barea LM, Blank N. An epidemiological study of headache in Florianopolis, Brazil. *Cephalalgia.* 2006;26:122-127.
22. Barea LM, Tannhauser M, Rotta NT. An epidemiologic study of headache among children and adolescents of southern Brazil. *Cephalalgia.* 1996;16: 545-549.
23. Stovner L, Hagen K, Jensen R, et al. The global burden of headache: A documentation of headache prevalence and disability worldwide. *Cephalalgia.* 2007;27:193-210.
24. Silverman K, Evans SM, Strain EC, Griffiths RR. Withdrawal syndrome after the double-blind cessation of caffeine consumption. *N Engl J Med.* 1992; 327:1109-1114.
25. Dodick D, Freitag F. Evidence-based understanding of medication-overuse headache: Clinical implications. *Headache.* 2006;46(Suppl. 4):S202-S211.
26. Wang SJ, Juang KD. Psychiatric comorbidity of chronic daily headache: Impact, treatment, outcome, and future studies. *Curr Pain Headache Rep.* 2002;6:505-510.
27. Guidetti V, Galli F. Psychiatric comorbidity in chronic daily headache: Pathophysiology, etiology, and diagnosis. *Curr Pain Headache Rep.* 2002;6:492-497.
28. Juang KD, Wang SJ, Fuh JL, Lu SR, Su TP. Comorbidity of depressive and anxiety disorders in chronic daily headache and its subtypes. *Headache.* 2000; 40:818-823.
29. Scher AI, Stewart WF, Buse D, Krantz DS, Lipton RB. Major life changes before and after the onset of chronic daily headache: A population-based study. *Cephalalgia.* 2008;28:868-876.
30. Ciancaglini R, Radaelli G. The relationship between headache and symptoms of temporomandibular disorder in the general population. *J Dent.* 2001;29:93-98.
31. De Kanter RJ, Truin GJ, Burgersdijk RC, et al. Prevalence in the Dutch adult population and a meta-analysis of signs and symptoms of temporomandibular disorder. *J Dent Res.* 1993;72:1509-1518.
32. Watts PG, Peet KM, Juniper RP. Migraine and the temporomandibular joint: The final answer? *Br Dent J.* 1986;161:170-173.
33. Ratcliffe GE, Enns MW, Belik SL, Sareen J. Chronic pain conditions and suicidal ideation and suicide attempts: An epidemiologic perspective. *Clin J Pain.* 2008;24:204-210.
34. Fishbain DA. The association of chronic pain and suicide. *Semin Clin Neuropsychiatry.* 1999;4:221-227.
35. Bigal ME, Lipton RB. Obesity is a risk factor for transformed migraine but not chronic tension-type headache. *Neurology.* 2006;67:252-257.
36. Scher AI, Lipton RB, Stewart WF. Habitual snoring as a risk factor for chronic daily headache. *Neurology.* 2003;60:1366-1368.

5.3 Artigo 4

Prevalence and Burden of Headaches as Assessed by the Health Family Program of a Public Health System

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Abstract

Background: Unified health systems often have Family Health Programs (FHP) as a core component of their preventive and early curative strategies. In Brazil, the FHP is established to proactively identify diseases such as diabetes and hypertension.

Aims: To use the FHP in order to assess the prevalence of primary headaches as per the Second Edition of the International Classification of Headache Disorders in a Brazilian city covered by the program, and 2) To document the burden of migraine and tension-type headache (TTH) in this population.

Methods: FHP agents were trained on how to apply questionnaires that screened for the occurrence of headaches in the past year. Screening method had been previously validated. Respondents that screened positively were interviewed by a headache specialist and all their headache types were classified. Additionally, disability (MIDAS and HIT) and health-related quality of life were assessed.

Results: The 1-year prevalence of migraine was 18.2% [95% CI = 13.7; 23.5]. TTH occurred in 22.9% [18.0%;28.6%]. Other primary headaches occurred in 10.8% of the participants. Idiopathic stabbing headache was significantly more common in individuals with migraine relative to those without migraine (44.7% vs. 10.3%, $p < 0.001$). Contrasting to TTH, migraineurs had a mean of 3.1 headache types, vs. 1.9 in TTH - $p<0.001$). Secondary headaches occurred in 21.7% of the participants over a 1-year period [16.9%; 27.3%]. Most cases were headaches attributed to infection (mostly respiratory). The impact of migraine was bimodal. Most sufferers had little impact, but a sizable minority was severely impaired.

Conclusion: The FHP can be effectively used to bring individuals with headache to the attention of providers. Future investigations should assess whether this increased attention translates into improved outcomes

Introduction

The Brazilian healthcare reforms of 1988 established a Public and Unified Health System, aiming to provide public access to healthcare for the entire population (1). Among its core attributes, the use of a Family Health Program (FHP) with decentralized administration (administration by the cities) is of particular importance (2). The FHP is based on a simple model, characterized by multidisciplinary teams (medical doctors, nurses, nurse assistants, and four to six community health agents) based on basic health units (BHUs) located in geographically defined areas, each covering no more than 5,000 residents (3). Each community health agent (CHA) is responsible for up to 120 families within the area. They conduct periodic domiciliary visits to identify health threats and to educate citizens on principles of preventive medicine. The CHAs are fully integrated with the primary care team. The teams are multifunctional, and the CHAs are responsible for pediatrics and women's health promotion, prevention of chronic diseases, and support and encouragement of community participation. They have to live within their own geographic area of coverage, and they are also responsible for identifying diseases and encouraging consultations in the BHU when proper. In short, the FHP supports healthy lifestyle choices through home-based health promotion and education; they provide continuously updated population registries and facilitate disease surveillance, and they proactively identify acute health problems (3, 4).

Health advances promoted by the FHP have been documented in areas such as hypertension and diabetes (4-6), but its potential for the management of pain disorders and headaches has been poorly explored despite the prevalence of these conditions in the population (7, 8). Since few studies have assessed the prevalence and burden of headaches in the Brazilian population using face-to-face interviews with validated

instruments, it may be that the lack of data translates into lack of recognition of the problem by the health authorities (9). If justified, the use of the FHP in this field, with its 30,000 teams and 250,000 CHA, may translate into enormous gain to the Brazilian population (10).

Accordingly, the aims of this study were: 1) to assess the prevalence of primary headaches as per the Second Edition of the International Classification of Headache Disorders (ICHD-2) in a Brazilian city covered by the FHP, and 2) to document the burden of migraine and tension-type headache (TTH) in this population. We ultimately aimed to generate data that may guide public health decisions regarding the proactive diagnosis and treatment of headache disorders by a public health system.

Methods

This was an observational, cross-sectional and population-based study conducted in Capela Nova, a small Brazilian city in a rural area, that, according to the 2000 Brazilian Census, had 2,066 inhabitants (1,631 of whom were over the age of ten) (9). The FHP in this city is well established and offered good population coverage. The town's 556 households are regularly visited (on a monthly basis) by the CHA.

For this study, the agents were trained by one of us (AAS) on how to apply questionnaires that screened for the occurrence of headaches in the past year. To assess the adequacy of the training, we randomly supervised selected interviews made by the agents.

The study was conducted from October 2005 to January 2006. In the first phase (Phase 1), the agents visited all homes in the town, and screened for headaches using the following question, "Have you had any headache episode over the last 12 months?" In addition, gender, age, marital status and educational level of the respondents were also recorded. All individuals older than 10 years living in the home were considered eligible for the research. Agents were told to return up to five times to any home in order to ensure that all residents had answered the questionnaires. Details of the adequacy of the CHA to screen headache have been described elsewhere (9).

We randomly sampled 1 in 6 areas of FHP and their respondents were to the clinic for in-person assessments. At the assessment phase (Phase 2), they were first evaluated by a neurologist with expertise in headaches using a semi-structured questionnaire. The neurological assessments happened from December 2005 to March 2006, and the headaches were classified by the ICHD-2 (11). In individuals with more than one headache type, all headaches were classified independently, as per the ICHD-2. Individuals that fulfilled diagnosis of probable medication overuse headache were

then recommended to restrict the use of analgesics, and were reassessed two months later, when a final diagnosis was assigned, therefore following the diagnostic recommendation of the International Headache Society.

In individuals with migraine and TTH, disability was assessed with the Headache Impact Test (HIT) (12) and the Migraine Disability Assessment Scale (MIDAS) (13); quality of life was assessed by the Medical Outcome Study Short Form 36 item Survey (SF-36) (14); depression was assessed using the Beck Depression Inventory (BDI) (15).

Statistical Analysis

Data were summarized by the Epi-info/2000- software, and analyzed using SPSS 12.0. The 1-year prevalence rates were calculated, and the 95% confidence intervals (CI) were estimated overall and by demographics. Age was divided into six categories: 10–29, 30–39, 40–49, 50–59, and over 60. Marital status was grouped as: single, married, divorced and widowed. Education level was categorized by the following years of school: four years, between five to nine years, and college. Demographics were compared using the Pearson's Chi-squared test.

The degree of the association was estimated using logistic regression, with 95% CI. Statistical significance defined as $p<0.05$. To assess the adjustment of the model, the Hosmer and Lemeshow's test was used.

This study was approved by the local ethics research committee. All individuals interviewed were informed of the research goals and signed the consent form. In the case of children, the consent form was signed by their parents.

Results

Sample Characteristics

A total of 1,605 individuals (837 of whom were women) were interviewed. Age ranged from 10 to 93 years old (mean ± SD; 40.1 ± 19.0). Most were single (40.9%) or currently married (47.9%). Most had attended elementary school. Only 4 residents refused to answer, were not met, or were unable to answer the question. Thus, 99.2% of the target population participated in this study. The demographics were aligned with the Brazilian general population (.http://www.ibge.gov.br/home/estatistica/populacao/censo2000/default.).

Prevalence of Primary Headaches

Of the participants, 258 (140 of whom were women) were selected for the clinical assessment. The prevalence of primary headaches is displayed in Table 1. The 1-year prevalence of migraine was 18.2% [95% CI = [95% CI = 13.7; 23.5]. TTH occurred in 22.9% [18.0%; 28.6%]. Other primary headaches occurred in 10.8% [7.4%; 15.5%] of the cases, with idiopathic stabbing headaches predominating in this category.

Of individuals diagnosed with episodic migraine, 31.5% had no more than 1 headache attack per month, and other 18% had no more than 1 attack per week, with the remaining having more than 1 attack per week but less than 15 days per month. Of individuals with episodic TTH, 36.3% had less than one attack per month and other 49% had no more than 1 day of headache per week.

As for treatment, the vast majority of individuals used some form of acute treatment, mostly dipyrone or acetaminophen, which are distributed free of charge to patients in the public health system. Few patients used combination analgesics with ergotamine or other non-steroidal antiinflammatory medications and none used triptans.

No participants reported using daily medication prescribed for migraine, although there were reports of propranolol or amytriptiline used for other medical conditions.

Idiopathic stabbing headache was significantly more common in individuals with migraine relative to those without migraine (44.7% vs. 10.3%, $p < 0.001$). Individuals with migraine were more likely to have other headache types, than individuals without migraine. Contrasting to TTH, migraineurs had a mean of 3.1 headache types, vs. 1.9 in TTH - $p<0.001$).

Details of findings on chronic daily headaches (CDH) have been previously reported in this journal (23). In brief, prevalence of CDH was 3.6%. Chronic migraine was the most common of the CDH (21, 36.8%). Chronic tension-type headache (10, 17.5%), medication overuse headache (13, 22.8%) and probable medication overuse headache (10, 17.5%) were also common. Medications commonly overused included combination analgesics with ergotamine and caffeine, acetaminophen and dipyrone.

Prevalence of Secondary Headaches

Secondary headaches occurred in 21.7% of the participants over a 1-year period [16.9%; 27.3%]. Most cases were headaches attributed to infection (mostly respiratory). Men were significantly more likely than women to report headaches attributed to alcohol use ($p < 0.05$). Details are presented in Table 1.

Multivariate Analyses

As expected, migraine was more common in women than in men (26.4% vs 8.5%, $p < 0.05$), and peaked in prevalence between the ages of 30 and 39. It was more frequent in those who had completed at least high school and in those who were married.

In multivariate analyses, migraine was 3.5 times more common in women than in men, and increased by 2.6 fold in married vs. single participants. It was also

significantly associated with increased education, after adjustments for demographic variables (Table 2). Adjustments were considered to be satisfactory as per the methods of Hosmer et al. (1997).

As for TTH, the only variable retained in the adjusted model was gender. No other variables were associated with TTH, although an important limitation of the analyses is discuss.

Finally, we found no association between frequency of headaches, MIDAS scores and SF-36 scores, although we were not powered to do so, since this was not the aim of the study.

Burden of Migraine and TTH

As assessed by the MIDAS questionnaire, migraine-related impact was mild in 41% of the sample, moderate in 9%, intense in 27%, and severe in 23%. Using HIT, 29.7% had grade 1 disability, 8.1% had grade 2, 13.5% had grade 3 and 48.6% had grade 4.

Only 28 participants had TTH but not migraine, and their HIT scales are presented in Table 3, as contrasted with the HIT of those with migraine but not TTH.

BDI scores were significantly higher in those with migraine relative to TTH (11.2 vs. 7.1, $p=0.028$). Significant differences for SF-36 scores were seen for the mental summary scale (74 vs. 56, $p<0.05$). Data are summarized in Table 3.

Discussion

Headaches occurred in 64.7% of the population, which is almost identical in prevalence to a previous study conducted in the same population, when the entire population had been screened in order to identify a good candidate question (65.4%) (9). Values were smaller than another study conducted in Brazil (80.8%) (8).

The prevalence of migraine in this study (18.2%) is aligned with other Brazilian studies (8) and with some studies conducted in other countries (16-18). The opposite was true for TTH, since we found a prevalence that was higher than other studies in Brazil. It seems, however, that the prevalence of TTH varies considerably as a function of different studies worldwide (19, 20).

For migraine, the gender and age distributions were aligned closely with what has been extensively reported (21, 22). The increased risk of migraine for those with increased education is aligned with European studies, but in disagreement with studies conducted in the United States (23, 24). Our data is aligned with other studies conducted in Brazil (8).

As expected, migraine without aura was more common than migraine with aura, and chronic migraine happened in 5% of the individuals; in 80% of them, excessive symptomatic medication intake was also found. Although much higher than what has been reported elsewhere, our findings support the Brazilian national study, which found a prevalence of 7% for chronic daily headaches (25). Details on CDH are described elsewhere (26)

Our methods yielded the identification of a sizable proportion of the population with secondary headaches, mostly of benign etiology. Idiopathic stabbing headaches happened in 10% of the individuals without migraine and in 44.7% of those with migraine. Similarly high prevalence among migraineurs has been described (27). In the

classical Vaga study, the life prevalence of idiopathic stabbing headache was 35.2%, but year prevalence was not reported (28).

For secondary headaches, it is important to emphasize that uncertainty regarding final diagnosis certainly exists, since diagnoses were assigned in retrospect, based on anamnesis, but without laboratory confirmation. Nonetheless, this is a limitation difficult to address in field studies, and the relevant message regarding the elevated prevalence of headaches is probably associated with certain situations common in life, such as fever. Full prevalence estimates would require prospective studies that would investigate the individuals while in the acute episode.

Our data also suggest that the disability and impact of headaches follow a bimodal distribution. While most have little impact and probably do not need to be proactively brought to the attention of the healthcare system, a sizable minority are severely affected. In other words, a subgroup of migraineurs is disproportionally burdened. In our study, impact was particularly important on physical health (pain and energy levels), and this is in agreement with population studies that contrasted migraineurs and controls (29,30). We failed to find significant differences contrasting migraine and TTH except for mental health (worse in migraineurs). Although counterintuitive, similar results were found by Wang et al. (31) on a sample of 901 headache patients. Because the study is populational, most migraineurs were expected not to be significantly affected. It may be that strategies should not focus on identifying migraineurs overall, but only those that are indeed affected in their quality of life.

We have demonstrated herein and in another study (9), that the FHP program may be efficient in screening these individuals if public policies indeed include screening migraine as one of the program aims. Regulators need of course to balance several competing public health interests that may be influenced by the FHP (e.g. to

screen migraine vs. other diseases, or to focus on diagnoses relative to prevention trough education). However, to make informed decisions, pilot data needs to be generated and this was the aim of our current study.

In this study, we also demonstrated that, with adequate training, diagnosis can be easily done in the decentralized model of the public health system. In a separate study, we also showed that education directed towards primary care is also associated with decreased referral rates to specialized neurological care. Indeed, in this study, we found evidence that supports the concept that, for some individuals, migraine is as debilitating as asthma, diabetes and hypertension (29). Accordingly, we suggest that the FHP should proactively bring selected migraineurs to the attention of the medical team, for assignment of proper diagnosis and treatment. As a concrete action, the Brazilian Headache Society, with access to the data generated by us, established a group from its board of directors to discuss next steps with government officials.

Our study has limitations in addition to the previously stated inaccuracy in diagnosing secondary headaches. First, the validation of the screening question was done for migraine only, not for all headaches. It may be that individuals with very infrequent headaches or with headaches associated with events such as trauma answered the screening questions in the negative. Accordingly, we may have underestimated headaches other than migraine. Second, our sample allowed some contrasts, but not adjusted contrasts between individuals with "pure" migraine and "pure TTH," since most had both migraine and TTH._Third and most important. Because the FHP is geographically defined, population attended by the agents tend to be very homogeneous regarding income (since they all live in the same area of the city) and education. We indeed collected data on energy consumption to stratify for income using the methodology adopted by the Brazilian Statistics Bureau, but found that the homogeneity

of the sample made us underpowered to identify factors associated with prevalent headaches.

Nonetheless, our data strongly suggest that trained CHA working in well-structured FHP may play a crucial role in not only identifying individuals with headache (for research and surveillance purposes), but also in bringing to the attention of the system those who have frequent headaches associated with quality of life limitations. Future studies should measure the cost effectiveness of such procedures and whether they are potentially associated with significantly improved outcomes.

References

1. Pucca Junior GA, Lucena EH, Cawahisa PT. Financing national policy on oral health in Brazil in the context of the Unified Health System. Braz Oral Res. 2010;24 Suppl 1:26-32.

2. Spedo SM, Tanaka OY, Pinto NR. [The challenge of decentralization of the Unified National Health System in large cities: the case of Sao Paulo, Brazil]. Cad Saude Publica.2009;25(8):1781-1790.

3. Campos GW. [Physician training, university hospitals, and the Unified Health System in Brazil]. Cad Saude Publica.1999;15(1):187-193.

4. Dourado I, Oliveira VB, Aquino R, Bonolo P, Lima-Costa MF, Medina MG, et al. Trends in Primary Health Care-sensitive Conditions in Brazil: The Role of the Family Health Program (Project ICSAP-Brazil). Med Care. 2011;49(6):577-584.

5. Silva LM, Palha PF, Barbosa GR, Protti ST, Ramos Ada S. [Pensioners with type 2 diabetes in the family health program in Ribeirao Preto, Sao Paulo, Brazil]. Rev Esc Enferm USP. 2010;44(2):462-468.

6. Escorel S, Giovanella L, Magalhaes de Mendonca MH, de Castro Maia Senna M. [The Family Health Program and the construction of a new model for primary care in Brazil]. Rev Panam Salud Publica. 2007;21(2-3):164-176.

7. Lipton RB, Stewart WF, Diamond S, Diamond ML, Reed M. Prevalence and burden of migraine in the United States: data from the American Migraine Study II. Headache. 2001;41(7):646-657.

8. Queiroz LP, Peres MF, Piovesan EJ, Kowacs F, Ciciarelli MC, Souza JA, et al. A nationwide population-based study of migraine in Brazil. Cephalalgia. 2009;29(6):642-649.

9. Silva Junior AA, Krymchantowski A, Moreira P, Vasconcelos L, Gomez R, Teixeira A. Prevalence of headache in the entire population of a small city in Brazil. Headache. 2009;49(6):895-899.

10. Stovner L, Hagen K, Jensen R, Katsarava Z, Lipton R, Scher A, et al. The global burden of headache: a documentation of headache prevalence and disability worldwide. Cephalalgia. 2007;27(3):193-210.

11. Society. HCSotIH. The International Classification of Headache Disorders. 2nd Edition. Cephalalgia. 2004;24(Suppl 1):1-149.

12. Kosinski M, Bayliss MS, Bjorner JB, Ware JE, Jr., Garber WH, Batenhorst A, et al. A six-item short-form survey for measuring headache impact: the HIT-6. Qual Life Res. 2003;12(8):963-974.

13. Stewart WF, Lipton RB, Kolodner KB, Sawyer J, Lee C, Liberman JN. Validity of the Migraine Disability Assessment (MIDAS) score in comparison to a diary-based measure in a population sample of migraine sufferers. Pain. 2000;88(1):41-52.

14. Lipton RB, Bigal ME, Amatniek JC, Stewart WF. Tools for diagnosing migraine and measuring its severity. Headache. 2004;44(5):387-398.

15. Gorenstein C, Andrade L. Validation of a Portuguese version of the Beck Depression Inventory and the State-Trait Anxiety Inventory in Brazilian subjects. Braz J Med Biol Res. 1996;29(4):453-457.

16. Patel NV, Bigal ME, Kolodner KB, Leotta C, Lafata JE, Lipton RB. Prevalence and impact of migraine and probable migraine in a health plan. Neurology. 2004;63(8):1432-1438.

17. O'Brien B, Goeree R, Streiner D. Prevalence of migraine headache in Canada: a population-based survey. Int J Epidemiol. 1994;23(5):1020-1026.

18. Morillo LE, Alarcon F, Aranaga N, Aulet S, Chapman E, Conterno L, et al. Prevalence of migraine in Latin America. Headache. 2005;45(2):106-117.

19. Buchgreitz L, Lyngberg AC, Bendtsen L, Jensen R. Increased prevalence of tension-type headache over a 12-year period is related to increased pain sensitivity. A population study. Cephalalgia. 2007;27(2):145-152.

20. Lyngberg AC, Rasmussen BK, Jorgensen T, Jensen R. Has the prevalence of migraine and tension-type headache changed over a 12-year period? A Danish population survey. Eur J Epidemiol. 2005;20(3):243-249.

21. Lipton RB, Scher AI, Kolodner K, Liberman J, Steiner TJ, Stewart WF. Migraine in the United States: epidemiology and patterns of health care use. Neurology. 2002;58(6):885-894.

22. Steiner TJ, Scher AI, Stewart WF, Kolodner K, Liberman J, Lipton RB. The prevalence and disability burden of adult migraine in England and their relationships to age, gender and ethnicity. Cephalalgia. 2003;23(7):519-527.

23. Stewart WF, Lipton RB, Celentano DD, Reed ML. Prevalence of migraine headache in the United States. Relation to age, income, race, and other sociodemographic factors. Jama. 1992;267(1):64-69.

24. Bigal ME, Lipton RB, Winner P, Reed ML, Diamond S, Stewart WF. Migraine in adolescents: association with socioeconomic status and family history. Neurology. 2007;69(1):16-25.

25. Queiroz LP, Peres MF, Kowacs F, Piovesan EJ, Ciciarelli MC, Souza JA, et al. Chronic daily headache in Brazil: a nationwide population-based study. Cephalalgia. 2008;28(12):1264-1269.

26. Silva Jr A, Costa EC, Gomes JB, Leite FM, Gomez RS, Vasconcelos L, Gomez RS, Krymchantowski A, Moreira P,Teixeira AL. Chronic Headache and Comorbibities: A two-Phase, Population-Based, Cross-Sectional Study. Headache 2010;50:1306-12).

27. Piovesan EJ, Kowacs PA, Lange MC, Pacheco C, Piovesan LR, Werneck LC. [Prevalence and semiologic aspects of the idiopathic stabbing headache in a migraine population]. Arq Neuropsiquiatr 2001;59(2-A):201-205.

28. Sjaastad O, Bakketeig LS. Cluster headache prevalence. Vaga study of headache epidemiology. Cephalalgia 2003;23(7):528-533.

29. Aaronson NK, Muller M, Cohen PDA, Essink-Bot M, Fekke M, Sander-man R, et. al. Translation, validation and norming of the Dutch language version of the SF-36 Health Survey in community and chronic disease populations. J Clin Epidemiol 1998; 51:1055-1068.

30. Lipton RB, Liberman JN, Kolodner KB, Bigal ME, Dowson A, Stewart WF. Migraine headache disability and health-related quality-of-life: a population-based case-control study from England. Cephalalgia. 2003;23(6):441-50.

31. Wang S, Fuh J, Lu S, Juang K. Quality of life differs among headache diagnoses: analysis of SF-36 survey in 901 headache patients. Pain 2001;89(2-3):285-292.

Table 1: Prevalence of primary and secondary headaches as a function of demographics.

	Male		Female		P value
	N	%	N	%	
Migraine	10	8.5%	37	26.4%	**<0.001***
Migraine without aura	6	5.1%	30	21.4%	**0.025***
Migraine with aura	4	3.4%	10	7.1%	0.999**
Chronic migraine	1	0.8%	6	4.3%	0.666**
Probable migraine	0	0.0%	1	0.7%	0.999**
Tension-type headache	18	15.3%	41	29.3%	**0.008***
Infrequent episodic TTH	15	12.7%	34	24.3%	0.666*
Frequent episodic TTH	3	2.5%	7	5.0%	0.999**
Other primary headaches	4	3.4%	24	17.1%	**0.001****
Idiopathic stabbing headache	4	3.4%	20	14.3%	0.109*
Headache attributed to exercises	0	0.0%	3	2.1%	0.552**
Headache associated to sexual activity	0	0.0%	1	0.7%	0.999**
Secondary Headaches	18	15.3%	38	27.1%	**0.021***
Headache attributed to substance use	0	0.0%	5	3.6%	0.313**
Headache attributed to alcohol use	5	4.2%	3	2.1%	**0.041****
Headache attributed to infection	13	16.7%	30	21.4%	0.778*

* Pearson Chi-Squared Test * Fisher exact test

Table 2 – Multivariate analyses for the prevalence of migraine

Variables	Beta	P value	OR	95% CI	
				Range	
Gender					
Male		1.0			
Female	1.3	0.007	3.5	1.4	8.7
Marital Status					
Single			1.0		
Married	1.0	0.023	2.6	1.1	5.9
Widowed	0.8	0.222	2.3	0.6	8.3
Divorced	-19.3	0.999			
Education					
Elementary – 4 yrs			1.0		
High School – 5-9 yrs	0.1	0.903	1.1	0.4	3.1
College	1.4	0.043	4.0	1.0	15.6
Adequacy of the model*		0.762			

* Hosmer e col. (1997)

Table 3: Health-related qualify of life, as assessed by the SF-36, in individuals with migraine and tension type headache (TTH)

SF-36	Group	Mean	SD	Median	P value
Functional	Migraine	78.7	26.7	90	0.444
	TTH	75.2	26.3	82.5	
Pain	Migraine	62.6	31.1	51	0.642
	TTH	55.5	23.0	62	
Overall Health	Migraine	64.6	20.7	67	0.412
	TTH	67.6	21.3	72	
Energy Levels	Migraine	54.1	24.1	50	0.190
	TTH	61.0	16.4	65	
Social	Migraine	69.5	23.4	75	0.771
	TTH	72.0	20.5	75	
Emotional	Migraine	54.3	45.4	66.7	0.272
	TTH	68.1	38.7	83.3	
Mental	Migraine	54.5	23.5	56	**0.013**
	TTH	68.3	19.3	74	

5.4 Artigo 5

Frequência dos diferentes tipos de cefaleias no Ambulatório de Cefaleia do Hospital das Clínicas da Universidade Federal de Minas Gerais

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Resumo

Conhecer o perfil das cefaleias tratadas em centros terciários pode auxiliar o processo de diagnóstico e de terapêutica em outros níveis de assistência. **Objetivo:** Avaliar a frequência dos diferentes diagnósticos de cefaleias do Ambulatório de Cefaleias do Hospital das Clínicas da Universidade Federal de Minas Gerais (AmbCef-UFMG). **Métodos:** Estudo observacional com 289 pacientes atendidos consecutivamente no AmbCef-UFMG. O diagnóstico da cefaleia baseou-se nos critérios da Classificação Internacional das Cefaleias (ICDH-2004). **Resultados:** A idade média dos pacientes foi 42,6 anos, sendo a maioria do sexo feminino (86,9%) e com menos de nove anos de escolaridade. As cefaleias primárias foram as mais comuns, sendo a migrânea encontrada em 79,8% dos casos e a cefaleia do tipo tensional (CTT) em 20,4%. Entre as secundárias, o tipo mais comum foi atribuído ao uso excessivo de analgésicos (16,6%), seguido de casos menos comuns como a hipertensão intracraniana idiopática. A cefaleia crônica diária (CCD) esteve presente em 31,8% dos casos. **Discussão:** Este estudo confirma dados da literatura que mostram a migrânea como cefaleia mais comum em centros terciários. O número expressivo de casos de CCD e de uso excessivo de analgésicos indica que desde este nível de atenção os pacientes sejam orientados e evitar o uso abusivo de medicação sintomática.

Palavras-chave: cefaleia, migrânea, cefaleia do tipo tensional, cefaleia crônica diária, prevalência, centro terciário.

Abstract

Understanding the profile of headaches treated in tertiary centers may aid in the diagnosis and treatment of these disorders in other levels of medical care. **Objective:** To assess the frequency of the different diagnosis of headaches in the Headache Ward of the Teaching Hospital of the Federal University of Minas Gerais (AmbCef-UFMG). **Methods:** observational study, involving 289 patients consecutively treated in the AmbCef-UFMG. The headache diagnosis was based on criteria from the International Classification of Diseases (ICD-2004). **Results:** patient mean age was 42.6 years, mostly females (86.9%), with less than nine years of schooling. Primary headaches were the most common. Migraine was found in 79.8% of the cases and tension headache (TH) in 20.4%. Among the secondary headaches, the most common type was associated with the excessive use of analgesic medication (16.6%), followed by less common types, i.e. idiopathic intracranial hypertension. Chronic daily headache (CDH) was found in 31.8% of the cases. **Discussion:** our study corroborates literature data on migraine as the most common type of headache in tertiary care centers. The large number of cases of CDH and the excessive use of analgesics indicate that even from this level of medical care, patients must be educated and avoid the excessive use of symptomatic medication.

Keywords: headache, migraine, tension-type headache, daily chronic headache, prevalence, tertiary center.

Introdução

A cefaleia é um sintoma universal e estima-se que 95% dos homens e 99% das mulheres terão pelo menos um episódio ao longo da vida e cerca de 40% apresentam-na com certa regularidade[1]. Mesmo comunidades distantes dos grandes centros urbanos apresentam taxas elevadas de cefaleias, como mostrou um estudo epidemiológico realizado com toda a população de uma pequena cidade no interior de Minas Gerais. Nesse estudo, 65,4% dos habitantes tiveram cefaleia em um período de 12 meses[2].

As causas de cefaleia são múltiplas e predominam aquelas decorrentes de alterações funcionais do sistema nervoso central, chamadas cefaleias primárias, como a cefaleia do tipo tensional (CTT) e a migrânea. As cefaleias podem variar conforme a intensidade e a frequência, podendo ser extremamente incapacitantes[3]. Dadas a complexidade, a frequência e a morbidade de alguns casos, há demanda por atendimento em centros especializados. A frequência dos tipos diagnósticos tratados nesse contexto mostra-se diferente quando comparada à frequência observada na comunidade[3,4]

Se por um lado a CTT figura como a cefaleia mais prevalente na população em geral, nos centros terciários há predomínio da migrânea[3-7]. Essa diferença se explica, pelo menos em parte, pelo fato de que a CTT episódica, embora muito comum, é menos incapacitante[3]. Por sua vez, a migrânea é uma cefaleia caracteristicamente de forte intensidade, sendo acompanhada por sintomas como náusea e vômitos ou foto e fonofobia[8].

A cefaleia pode ser incapacitante não só pela intensidade, mas também pela frequência das crises, podendo se apresentar de forma quase diária. Essa síndrome é conhecida como cefaleia crônica diária (CCD) e sua prevalência na população geral é em torno de 5%, enquanto em centros terciários varia entre 30 e 90% dos casos[4,9].

Conhecer o perfil das cefaleias atendidas em centros terciários pode auxiliar na elaboração dos processos diagnósticos e terapêuticos nos níveis de atenção primária e secundária, propiciando um manejo mais adequado dos casos. Nesse sentido, apresentaremos a frequência dos diferentes diagnósticos de cefaleias do Ambulatório de

Cefaleias do Hospital das Clínicas da Universidade Federal de Minas Gerais (AmbCef-UFMG).

Métodos

Trata-se de estudo transversal e descritivo que incluiu 289 pacientes atendidos consecutivamente no AmbCef-UFMG no período de fevereiro a maio de 2011. Os pacientes são encaminhados ao serviço provenientes de centros de saúde de atendimento primário ou de outros ambulatórios do complexo hospitalar do Hospital das Clínicas da UFMG para o Ambulatório de Neurologia Geral onde é feita a triagem para o AmbCef. O AmbCef recebe pacientes a partir de 14 anos de idade. A primeira consulta é realizada de forma sistemática e inclui a avaliação de um neurologista e, posteriormente, de uma equipe multiprofissional (dentistas, fisioterapeutas, nutricionistas, psiquiatras, psicólogos e fonoaudiólogos). Os dados sócio-demográficos - idade, sexo e escolaridade - e semiológicos são coletados por uma entrevista semi-estruturada. O diagnóstico é estabelecido através dos critérios da Classificação Internacional das Cefaleias-2004.[10]

Nos casos de CCD associada ao uso excessivo de analgésicos, o diagnóstico definitivo só é estabelecido após dois meses de suspensão do abuso de medicação sintomática, tempo necessário para que as características semiológicas dos casos assumam o padrão clínico que precedeu a cronificação da dor.

Resultados

Os 289 indivíduos participantes do estudo apresentaram uma média de idade de 42,6 anos, com predomínio do sexo feminino (86,9%). A maior parte deles apresentou baixa escolaridade, sendo que 52,3% dos pacientes possuíam menos de nove anos de estudo formal, 35,0% possuíam entre nove e onze anos e apenas 12,7% estudaram por período maior que onze anos.

A maioria dos pacientes apresentou cefaleias primárias, sendo o diagnóstico mais encontrado o de migrânea, presente em 79,8% dos casos. Entre os diferentes subtipos, migrânea sem aura foi o diagnóstico mais comum (42,2%), seguido de migrânea com aura (25,9%). A CTT foi o segundo tipo de cefaleia primária mais frequente, tendo sido encontrada em 20,4% dos casos. A CTT foi, portanto, mais comum que a cefaleia do tipo pontada, diagnosticada em 46 pacientes (15,9%). Foram

diagnosticados outros tipos menos comuns de cefaleias primárias, como a hemicrania paroxística crônica (n=5) e a cefaleia em salvas (n=2). Entre as cefaleias secundárias, o tipo mais comum foi cefaleia atribuída ao uso excessivo de analgésicos, com frequência similar ao da cefaleia primária em pontadas (48 indivíduos ou 16,6% dos casos). O segundo tipo de cefaleia secundária mais frequente foi decorrente de transtorno intracraniano não-vascular com 10 casos, incluindo nesta categoria os de hipertensão intracraniana idiopática. Todas as cefaleias descritas, bem como outros tipos de cefaleia menos frequentes, estão representadas na TABELA 1. Salienta-se que a maioria dos indivíduos recebeu mais de um diagnóstico, o que justifica o maior número de diagnósticos do que de indivíduos participantes.

A maioria dos casos de cefaleia primária em pontada, CTT e cefaleia atribuída ao uso excessivo de analgésicos foi encontrada em pacientes com migrânea. Entre eles, 20,3% apresentaram cefaleia primária em pontada, 18% CTT e 19,4% consumiam analgésicos de forma abusiva. As associações desses tipos diagnósticos com a migrânea podem ser visualizadas na TABELA 2.

A CCD esteve presente em 31,8% dos casos. As causas foram cefaleia atribuída ao uso excessivo de analgésicos, migrânea crônica, cefaleia do tipo tensional crônica, hemicrania paroxística crônica e cefaleia pós-traumática crônica.

Discussão

Assim como na população geral, o perfil predominante do paciente encontrado em nosso ambulatório é de mulheres na faixa etária de 20 a 49 anos,[6,12,13] ou seja, uma população em idade reprodutiva e economicamente ativa, em que crises de dor incapacitantes e mal-controladas acarretarão prejuízo ao próprio indivíduo e a à sociedade. Steiner e colabores, em um estudo inglês, estimaram uma perda de 5,7 dias de trabalho ou de estudo por ano para cada migranoso[17].

Nossa amostra teve amplo predomínio de indivíduos com baixa escolaridade. O nível de escolaridade apresenta grande variação entre centros. Estudos brasileiros observaram um predomínio da ocorrência de crises de cefaleia entre pacientes com baixo nível sócio-econômico[6,13,19]. Entretanto, um estudo inglês não observou essa

tendência[17], o que pode refletir a natureza dos centros brasileiros, compostos predominantemente de serviços públicos de atenção à saúde.

A frequência dos tipos diagnósticos das cefaleias na população geral difere da observada em centros terciários possivelmente pela maior ou menor morbidade que causam aos indivíduos, o que influencia a demanda por atendimento médico[4,5,6,7,11]. A migrânea é o tipo mais prevalente em centros terciários de atendimento, com taxas variando entre 35 e 80%[5,6,7]. Em nosso ambulatório, a migrânea foi diagnosticada na mesma freqüência de um estudo prévio, em que a prevalência encontrada foi 79,2%[5]. Em um serviço especializado paulista, 37,98% dos pacientes apresentaram migrânea como queixa principal e 22,65% CTT[6]. Essa diferença na frequência de migrânea pode refletir diferenças metodológicas, uma vez que o estudo paulista é retrospectivo e o nosso de corte transversal. Entretanto, a maior prevalência de migrânea é evidente e reflete sua importância clínica na decisão de se procurar assistência médica. Além disso, sua associação com outras cefaleias primárias é comum, podendo atingir 40% dos casos[14]. A cefaleia primária em pontada, por exemplo, foi encontrada em aproximadamente um quinto dos pacientes migranosos.

A CTT, episódica ou crônica (CTTC), foi a segunda causa mais freqüente de cefaléia, enquanto na comunidade é o tipo mais comum, com prevalência variando de 30 a 80%[10]. Um estudo chinês encontrou uma prevalência de 66,9% de CTT em um centro terciário[18].

A CCD foi responsável por uma aproximadamente um terço dos casos, enquanto na comunidade a prevalência gira em torno de 3 a 7%[9,16]. A causa mais frequente de CCD foi a migrânea associada ao uso excessivo de analgésicos. Esse dado expõe a complexidade clínica dos pacientes referenciados a centros terciários, uma vez que a resposta destes pacientes à terapia profilática possui pouca eficácia enquanto persistir o uso abusivo de analgésicos. Além disso, o diagnóstico definitivo somente pode ser estabelecido dois meses após a interrupção do uso excessivo da medicação sintomática[10].

O conhecimento das cefaleias mais frequentes em um ambulatório de atendimento especializado pode auxiliar no diagnóstico diferencial dos casos quando atendidos na atenção primária. Além disto o número expressivo de casos de CCD e uso

excessivo de analgésicos indica que desde este nível de atenção os pacientes sejam orientados e evitar o uso abusivo de medicação sintomática.

Tabela 1 Diagnóstico dos pacientes atendidos no Ambulatório de Cefaleias da UFMG

Diagnósticos	**N**	**%**
Migranea sem aura	122	42,2
Migranea com aura	75	25,9
Migranea crônica	34	11,7
Cefaleia do tipo tensional episódica infrequente	10	3,4
Cefaleia do tipo tensional episódica frequente	22	7,6
Cefaleia do tipo tensional crônica	32	11,0
Cefaleia em salvas	2	0,7
Hemicrania paroxística crônica	5	1,7
Cefaleia primária em pontada	46	15,9
Cefaleia pós-traumática crônica	3	1
Cefaleia atribuída a doença vascular craniana ou cervical	2	0,7
Cefaleia atribuída a transtorno intracraniano não-vascular	10	3,4
Cefaleia por uso excessivo de analgésicos	48	16,6
Neuralgias cranianas e causas centrais de dor facial	8	2,7

Tabela 2 Migrânea e cefaleias associadas

Diagnóstico	**Migrânea**	
	N	**%**
Cefaleia do Tipo Tensional Episódica	18	8,1
Cefaleia do Tipo Tensional Crônica	22	9,9
Cefaleia primária em pontada	45	20,3
Cefaleia por uso excessivo de analgésicos	43	19,4

Referências Bibliográficas

1. Rasmussen BK, Jensen R, Schroll M, Olesen J. Epidemiology of headache in a general population - a prevalence study. J Clin Epidemiol, v.44, n.11, p.1147-57, 1991.
2. Silva-Júnior AA, Krymchantowski A, Moreira P, Vasconcelos L, Gomez RS, Teixeira AL. Prevalence of Headache in the Entire Population of a Small City in Brazil. Headache 2009;49:895-899
3. Stovner LJ, Hagen K, Jensen R, Katsarava Z, Lipton RB, Scher AI, et al. The global burden of headache: a documentation of headache prevalence and disability worldwide. Cephalalgia, 2007, 27, 193–210
4. Silva-Júnior AA, Faleiros BE, Santos TM, Gómez RS, Teixeira AL. Relative frequency of headache types A longitudinal study in the tertiary care. Arq Neuropsiquiatr 2010;68(6)
5. Vasconcelos LPB, Stancioli FG, Leal JC, Costa EAC, Silva-Júnior AA, Gómez RS et al. Cefaléias em serviço especializado. Migrâneas & Cefaléias 2006;9:4-7.
6. Felício AC, Bichuetti DB, Santos WA, Godeiro Junior CO, Marin LF, Carvalho DS. Epidemiology of primary and secondary headaches in a Brazilian tertiary-care center. Arq Neuropsiquiatr 2006;64:41-46.
7. Gantenbein AR, Kozak S, Agosti F, Agosti R, Isler H. Headache patients in primary care and a tertiary care unit in Zürich, Switzerland. Cephalalgia 2006,26: 1451-1457.
8. Silva-Júnior AA, Moraes DN, Rezende FB, Pereira GL, Morato EG, Cunninghan MCQS, et al. Frequência dos tipos de cefaléias atendidos no pronto atendimento do Hospital das Clínicas da Universidade Federal de Minas Gerais. Migrâneas cefaléias, v.11, n.2, abr./mai./jun. 2008
9. Silva-Júnior AA, Costa EC, Gomes JB, Leite FM, Gomez RS, Vasconcelos LP, et al. Chronic Headache and Comorbibities: A Two-Phase, Population-Based, Cross-Sectional Study. Headache 2010;50:1306-1312
10. Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 2nd Edition. Cephalalgia 2004;24(Suppl 1):S9-S160.

11. Vinding GR, Zeeberg P, Lyngberg A, Nielsen RT, Jensen R. The burden of headache in a patient population from a specialized headache center. Cephalalgia 2007;27:263-270.
12. Bigal ME, Rapoport AM, Bordini CA, Tepper SJ, Sheftell FD, Speciali JG. Burden of Migraine in Brazil: Estimate of Cost of Migraine to the Public Health System and an Analytical Study of the Cost-Effectiveness of a Stratified Model of Care. Headache 2003;43:742-754
13. Queiroz LP, Barea LM, Blank N. An epidemiological study of headache in Florianopolis, Brazil. Cephalalgia, 2005, 26, 122–127
14. Raskin NH, Schwartz RK. Icepick-like pain. Neurology 1980; 3:203-205.
15. Piovesan EJ, Kowacs PA, Lange MC, Pacheco C, Piovesan LRM, Werneck LC. Prevalência e características da cefaleia idiopática em punhaladas em uma população de migranosos. Arq Neuropsiquiatr 2001;59(2-A)
16. Queiroz LP, Peres MFP, Kowacs F, Piovesan EJ, Ciciarelli MC, Souza JA, Zukerman E. Chronic daily headache in Brazil: a nationwide population-based study. Cephalalgia, 2008, 28, 1264–1269
17. Steiner TJ, Scher AI, Stewart WF, Kolodner K, Liberman J, Lipton RB. The prevalence and disability burden of adult migraine in England and their relationships to age, gender and ethnicity. Cephalalgia. 2003 Sep;23(7):519-27.
18. Li X, Zhou J, Tan G, Wang Y, Ran L, Chen L. Clinical characteristics of tension-type headache in the neurological clinic of a university hospital in China. Neurol Sci. 2011 Jul 23.
19. Lucchetti G, Peres MF. The prevalence of migraine and probable migraine in a brazilian favela: results of a community survey. Headache. 2011 Jun;51(6):971-9.

5.5 Artigo 6

Frequency of primary headaches in the Community and in Specialty Care

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Abstract

Background: Comparisons between population and clinic-based findings may elucidate factors associated with medical consultation and barriers to care.

Objectives: To contrast the demographic, clinical features, and frequency of migraine and tension-type headache (TTH) in the population and in the specialty care.

Methods: All inhabitants from a city borough covered by the family health program were interviewed for presence of headache in the past year. Those screening positive were then interviewed and examined by a headache doctor. Headaches were diagnosed according to the Second Edition of the International Classification for Headache Disorders. The same team assessed all patients consecutively seen in a University-based outpatient headache center during 4 months.

Results: A total of 258 inhabitants were interviewed, and 76 screened positive for headache. In the clinic, sample consisted of 289 patients. Women were over-represented, both in the community sample and in the headache center, although men with headaches were more common in the population than in the clinic ($p<0.05$). Mean age was not significantly different. Education level was significantly lower among those from the population. In the population, TTH was the most common headache type, happening in 77.6% of participants [95% confidence interval (CI) = 68.0% - 87.2%], and in only 20.4% of the patients in the clinic (15.7% - 25.0%). Differently, in the clinic, the vast majority of patients had migraine (79.8, 95% CI = 74.1 - 83.6), and the proportion was higher than in the population (61.8%, 95% CI = 50.6 – 73.0].

Conclusion: Although TTH is more common than migraine, migraineurs are more likely to seek care. Regardless of headache type, women are more likely to seek care than men. Future studies should focus on determinants of these differences as a prelude for educational initiatives.

Key words: migraine, tension-type headache, population, clinic-based studies.

Introduction

Migraine and tension-type headache (TTH) are the most common primary headaches and, therefore, are best characterized from an epidemiological perspective[1] . Many studies on these headache types have been conducted in the primary care or in the community[2]. Evidence suggests that information collected in these two settings can substantially vary. For example, in the specialty care, migraine is found in 30% to 80% of the cases, and TTH in 5 to 30%[3,4,5] . In the community, migraine happens in 12-23% of the cases [6,7] , and TTH in 13-80% of the population[8,9,10]. Young and middle-aged women are disproportionally affected by migraine in all settings [3-7] . As for TTH, population studies show that it affects men more than women, while clinic-based studies suggest that it affects women more than men[8].

Comparisons between population and clinic-based findings may yield a more holistic understanding of the primary headaches, by not only understanding the epidemiology of the disease, but factors associated with medical consultation and barriers to care[2]. This understanding can then be used in planning education and preventive strategies in order to optimize treatment and resources[11]. The main difficulty is that most available clinic-based studies characterize headache sufferers from headache patients, meaning that all individuals have some type of headache. In the population, the denominator for the assessments encompasses individuals with and without headaches. The comparison is not symmetric therefore, meaning that clinic-based data describes relative frequency, while population data focus on prevalence.

The development of studies with uniform methodology specific tailored to conduct these comparisons may better reflect the similarities and differences between primary headaches in the population, in the primary care, and in the specialty care. Accordingly, herein we aimed to contrast the demographic, clinical features, and frequency of migraine and TTH in the population and in the specialty care.

Methods

Community data were gathered in Capela Nova, a city from the state of Minas Gerais, Brazil. According to the 2000 Brazilian Census, its population was 2066 inhabitants (1631 over the age of 10 years old)[12]. The present study is part of an observational, cross-sectional and population-based study conducted in 2 phases, the Capela Nova Study[13-15].

Initially, community health workers from the Family Health Program (FHP) directly interviewed all inhabitants aged 10 years or older for headache symptoms in the previous year. The FHP works through family health-care teams which are composed of one physician, one nurse, one auxiliary nurse, and four to six community health workers, and are assigned to specific geographical areas with defined populations of 600–1000 families. Activities provided by family health-care teams take place at primary care facilities, in patients' homes, and in the community. In the first phase of our study (screening phase), trained community health workers screened for the occurrence of headaches using the following question: "Have you had any headache episode over the last 12 months?" We randomly sampled 1 of 6 areas covered by the FHP. In this area, all inhabitants that reported having suffered at least one headache in the past year were offered in-person assessment by a neurologist with expertise in headache medicine, and headaches were diagnosed according to the Second Edition of the International Classification of Headache Disorders (ICHD-2)[16]. In individuals with more than one headache type, all headaches were classified independently, as per the ICHD-2. Assessments were conducted from December 2005 to March 2006. Detailed methods have been previously described[13-15]

The same investigator involved in the community-based coordinated a team of neurologists to used the very same procedures to diagnose consecutive patients attended a University-based headache center in the first half of 2011.

Statistical Analysis

Demographics and frequency of headaches were compared between groups. Data were transferred to Epi-info 2000 by a study coordinator and analyzed using SPSS 12.0.

Headache frequency is presented by headache diagnosis and confidence intervals were calculated. Significance level has been established at the 5% level.

Non-parametric data between groups were compared using the Chi-Squared test or the Fischer test (when anticipated values were small). For continuous variables, the Mann-Whitney test was used.

The study followed the guidance of the regulatory norms of the National Health Council. (Resolution 196/1996). The protocol and all forms were reviewed and approved by the Investigation Review Board of the Federal Fluminense University and of the Federal University of Minas Gerais, Brazil.

RESULTS

Sample Characteristics

In the community assessment, 258 inhabitants (140 of whom were women) were interviewed. Of the participants 76 had at least one headache type. As for the specialty care, sample consisted of 289 patients with complete assessments.

Women were over-represented, both in the community sample (71.1%) and in the headache center (86.9%), although men with headaches were more common in the population than in the clinic ($p<0.05$). Mean age of patients with headache were 42.6 in the population and 43.3 years in the clinic. Differences were not significant for age. Education level was significantly lower among those from the population. Table 1 compares demographics between groups

Among participants with headache, the relative frequency of the two types of headaches studied by us varied significantly in the population relative to the clinic (Table 2). In the population, TTH was the most common headache type, happening in 77.6% of participants [95% confidence interval (CI) = 68.0% - 87.2%], and in only 20.4% of the patients in the clinic (15.7% - 25.0%). Differently, in the clinic, the vast majority of patients had migraine (79.8, 95% CI = 74.1 - 83.6), and the proportion was higher than in the population (61.8%, 95% CI = 50.6 – 73.0].

Chronic daily headaches have also been assessed, but details have been previously reported[15] .

Discussion

When contrasting the primary headaches in the population and in the clinic, we found differences for gender and education but not for age. Regarding education, this was expected, since the region studied by us is mainly rural, while patients seen in the headache city come mostly from the metropolitan area[12]. As for gender, although women were over-represented in all groups, we found that the female/male ration was smaller in the population, suggesting that men are less likely to seek care relative to women, may be because their headaches tend to be less debilitating[17]. Indeed previous studies suggest that the burden of headaches on the sufferers is higher in women than in men[18]. It has also been suggested that women are more self-aware relative to their health and are more likely to seek medical care[19], regardless of headache type[20].

Our findings support previous studies, showing that TTH is the most common headache in the population and that migraine is the most common reason for headache consultation[21], and of emergency department visits[22]. Although we found that relative frequency of migraine in the population (61.8%) was similar to of TTH (77.6%), in the clinic the frequency of migraine (79.8%) was much higher than of TTH, which happened in only one fifth of the cases. Because migraine is more debilitating than TTH, our findings were expected [23].

The scenario may be amplified by the fact that TTH is less recognized and diagnosed than migraine[24]. Even in population-based studies, TTH is reported to happen in 13 to 80% of population, an enormous discrepancy[8,9]. This may be a consequence of the fact that the phenotype of TTH is less marked than of migraine. The ICHD-2 criteria, for example, accept attacks lasting from 30 minutes to 7 days (relative to the 4 to 72 hours of migraine [16]. Furthermore, TTH may be accompanied of muscular tenderness which, when in the fact, may mimic orofacial pain[25]. Accordingly, many individuals with TTH may end seeking dental care instead of neurological care, and are often diagnosed as having temporo-mandibular disorders (TMD) [26].

Indeed the lack of assessment for TMD was one of the limitations of our study, since a previous study in the same population found that TMD happened in most patients with headache [27]. Stratifying by TMD would provide valuable information about the differences found by us..

Nonetheless, our study advances the field, by exploring differences between general and triaged population. The parametric comparison of frequency of headaches (and not prevalence) is original, and studies on more representative populations are to be conducted.

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Table 1 – Sociodemographic characteristics of patients seen in a University-based headache outpatient clinic and in the population

	Headache Clinic (n=289)	**Population (n=76)**	**P value**
Gender			
Women	251 (86.9%)	54 (71.1%)	**0.001***
Men	38 (13.1%)	22 (28.9%)	
Education			
Less than 8 years	136 (52.3%)	57 (75.0%)	**0.002***
8 – 11 years	91 (35.0%)	14 (18.4%)	
11 years or more	33 (12.7%)	5 (6.6%)	
Age			
Mean	42.6	40.3	0.246**
Standard Deviation	15.0	15.2	
Minimum	14.0	11.0	
Maximum	88.0	76.0	

*Chi-squared test ** Mann-Whitney test.

Table 2 – Headache types in the community and in the headache clinic.

	Headache Clinic (n=289)		**Community (n=76)**		**P value**
	Proportion	**95% CI**	**Proportion**	**95% CI**	
Migraine	79.89%	[74.16; 83.63]	61.84%	[50.67; 73.02]	**0.002***
Tension-type headache	20.42%	[15.74; 25.09]	77.63%	[68.05; 87.22]	**<0.001***

*Chi-squared test

1 Stovner LJ, Hagen K, Jensen R, Katsarava Z, Lipton RB, Scher AI, *et al.* The global burden of headache: a documentation of headache prevalence and disability worldwide. Cephalalgia, 2007; 27:193-210.

2 Gantenbein AR, Kozak S, Agosti F, Agosti R, Isler H. Headache patients in primary care and a tertiary care unit in Zürich, Switzerland. Cephalalgia, 2006; 26:1451-57

3 Vasconcelos LPB, Stancioli FG, Leal JC, Costa EAC, Silva Jr AA, Gómez RS, *et al.* Cefaleias em serviço especializado. Migrâneas & Cefaleias, 2006; 9(1):4-7.

4 Felício AC, Bichuetti DB, Santos WA, Godeiro Junior CO, Marin LF, Carvalho DS. Epidemiology of primary and secondary headaches in a Brazilian tertiary-care center. Arq Neuropsiquiatr, 2006; 64(1):41-46.

5 Silva-Júnior AA, Faleiros BE, Santos, TM, Gomez RS, Teixeira AL Jr. Relative Frequency of Headaches Types- A Longitudinal Stdy in the Tertiary Care. Arq Neuropsiquiatr, 2010; 68:878-81

6 Pahim LS, Menezes AM, Lima R. Prevalence and factors associated to migraine in adult population, Southern Brazil]. Rev Saude Publica, 2006; 40(4):692-8, 2006.

7 Queiroz LP, Peres MFP, Piovesan EJ, Kowacs F, Ciciarelli MC, Souza JA, *et al*. A nationwide population-based study of migraine in Brazil. Cephalalgia, 2009; 29:642-649.

8 Queiroz LP, Peres MFP, Piovesan EJ, Kowacx F, Ciciarelli MC, Souza JA, *et al*. A nationwide population-based study of tension type headache in Brazil. Headache, 2009; 49:71-8.

9 Fernandes LC. Estudo epidemiológico da prevalência de cefaleia na cidade de Ribeirão Preto. Teshis. Ribeirão Preto: Universidade de São Paulo; 2004.

10 Silva Júnior AA, Picardi RTA, Gomez RS, Teixeira AL. Cefaleia crônica diária. RBM Rev Bras Med, 2010 out.; 67(esp.5).

11 Rasmussen BK, Jensen R, Olesen J. A population-based analysis of the diagnostic criteria of the International Headache Society. Cephalalgia, 1991; 11(3):129-34.

12 IBGE. Instituto Brasileiro de Geografia e Estatística. Censo de 2000.

13 Silva-Junior AA, Krymchantowski A, Moreira P, Vasconcelos L, Gomez RS, Teixeira AL. Prevalence of Headache in the Entire Population of a Small City in Brazil. Headache 2009;49:895-899.

14 Silva Jr A, Costa EC, Gomes JB, Leite FM, Gomez RS, Vasconcelos L, Gomez RS, Krymchantowski A, Moreira P,Teixeira AL. Chronic Headache and Comorbibities: A two-Phase, Population-Baed, Cross-Sectional Study. Headache 2010;50:1306-12.

15 Silva Junior AA, Bigal M, Vasconcelos LP, Rodrigues J, Gomez RS, Krymchantowski AV, Moreira Filho P, Teixeira AL. Prevalence and Burden of Headaches as Assesses by the Health Family Program. Headache. 2012 Feb 21. doi: 10.1111/j.1526-4610.2012.02090.x. [Epub ahead of print]

16 Headache Classification Subcomitte of the International Headache Society. The Internacional Classification of Headache Disorders. 2nd Edition. Cephalalgia 2004; 24:1-160.

17 Lipton RB, Liberman JN, Kolodner KB, Bigal ME, Dowson A, Stewart WF. Migraine headache disability and health-related quality-of-life: a population-based case-control study from England. Cephalalgia. 2003;23(6):441-50.

18 Lipton RB, Scher AI, Kolodner K, Liberman J, Steiner TJ, Stewart WF. Migraine in the United States: epidemiology and patterns of health care use. Neurology. 2002;58(6):885-894.

19 Tepper SJ, Dahlöf CG, Dowson A, Newman L, Mansbach H, Jones M, *et al*. Prevalence and diagnosis of migraine in patients consulting their physician with a complaint of headache: data from the Landmark Study. Headache, 2004; 44(9):856-64.

20 Rarmussen, B.K. Epidemiology of headache. Cephalalgia, v.15, n.1, p.45-68, 1995.

21 Tepper SJ, Dahlöf CG, Dowson A, Newman L, Mansbach H, Jones M, *et al*. Prevalence and diagnosis of migraine in patients consulting their physician with a complaint of headache: data from the Landmark Study. Headache, 2004; 44(9):856-64.

22 Silva Jr, AA , *et al.* Frequência de cefaléias no Pronto-atendimento do Hospital das Clínicas-UFMG. Migrâneas & Cefaleias, 2008

23 Lipton RB, Bigal ME. Migraine: epidemiology, impact, and risk factors for progression. Headache, 2005; 45(Suppl 1):S3-S13.

24 Bendstein L, Jensen R. Tension type headache. Neurol Clin, 2009;1:525-35.

25 Raphael KG, Marbach JJ, Klausner J. Myofascial face pain. Clinical characteristics of those with regional vs. widespread pain. J Am Dental Assoc, 2000 Feb; 131(2):161-71.

26 Svensson P. Muscle pain in the head: overlap between temporomandibular disorders and tension-type headaches. Curr Opin Neurol, 2007; 20:320-325.

27 Freqüência de disfunção temporomandibular em pacientes de um serviço especializado de cefaléia. Gomes JBL, FMG, Amorim ML, Silva Junior AA, Leal JC, Gómez RS, Teixeira AL. Migraneas cefaléias 2007; 10 (4): 168-170.

5.6 Artigo 7

Temporo-Mandibular Disorders and Chronic Daily Headaches in the Community and in Specialty Care

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Abstract

Background: Chronic daily headaches (CDH) are often associated with temporo-mandibular disorders (TMD). However, large studies that assessed the relationship were conducted in the population, and clinical exams were not completed. Clinic-based studies with expert diagnosis are, in turn, often small and may not be representative.

Objective: To contrast the demographics and clinical symptoms of CDH and TMD in participants from the population relative to patients seen in a headache clinic.

Methods: All inhabitants of a city in Brazil were interviewed. Those with more than 15 days of headache per month were examined by a team consisting of a neurologist, a dentist and a physical therapist. Headaches were classified as per the Second Edition of the International Classification of Headache Disorders; TMD as per the Research Diagnostic Criteria. The procedure was repeated (by the same team) with CDH sufferers consecutively seen in a headache center.

Results: Of 1,605 inhabitants that were interviewed, 57 (3.6%) had CDH and 43 completed all physical assessments. As for the specialty care, of 289 patients, 92 had CDH, and 85 completed all assessments. No significant differences were seen for gender and age. (Women accounted for 84.2% of community sample and 92.4% of headache center population with age mean = 42 and 43.3 years respectively). The education level of the total population was significantly lower among those from the community. Proportion of CDH sub-types were not significantly different between groups. Among CDH sufferers from the population, prevalence of TMD was 58.1%; in the headache center (p=0.07). Muscular TMD happened in 30.2% of CDH patients from the community vs. 55.3% in the headache center. Differences of TMD types between groups were not significant.

Conclusion: Individuals with CDH recruited from the population are not substantially different than those in the headache center regarding the presence of TMD and

demographics. Accordingly, detailed clinic-based studies can be conducted and issues of generalizability may not be of concern

Key-words: chronic daily headache, temporo-mandibular disorders, prevalence.

Introduction

Primary headaches that happen daily or almost daily are syndromically defined as chronic daily headaches (CDH) [1]. Most CDHs evolve from the episodic forms of the primary headaches, and risk factors have been identified, including excessive use of analgesics and pericranial muscular tenderness[2,3].

Muscular tenderness is also a common feature of the temporo-mandibular disorders (TMD), a syndrome that is associated with abnormalities of the masticatory muscles, temporo-mandibular joint and associated structures[4]. Limited evidence suggests that TMD may be a risk factor for increased headache frequency in primary headache syndromes[5], although most studies were justifiably conducted in specialty care, since the gold standard diagnosis requires palpation of the pericranial muscles[6]. Available population-based studies assessed TMD symptoms but also supported the concept that TMD increases risk of CDH[7].

Because most robust evidence for the association between TMD and CDH came from clinic-based studies, raising issues of generalizability of data, we, herein, contrasted the demographics and clinical symptoms of headache and TMD between inhabitants of a city and patients seen in a university-based tertiary headache clinic.

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Methods

Community data were gathered in Capela Nova, a city from the state of Minas Gerais, Brazil. According to the 2000 Brazilian Census, its population was 2066 inhabitants (1631 over the age of 10 years old). The present study is part of an observational, cross-sectional and population-based study conducted in 2 phases, the Capela Nova Study[8-10].

Initially, community health workers from the Family Health Program (FHP) directly interviewed all inhabitants aged 10 years or older for headache symptoms in the previous year. The FHP works through family health-care teams which are composed of one physician, one nurse, one auxiliary nurse, and four to six community health workers, and are assigned to specific geographical areas with defined populations of 600–1000 families.

In the first phase of our study (screening phase), trained community health workers screened for the occurrence of headaches using the following question: “Have you had any headache episode over the last 12 months?” Those who screened positive were asked about headache frequency in the past month, and those reporting 15 days or more of headache were offered in-person assessment by neurologists with expertise in headache medicine. Three neurologists independently examined participants, and headaches were diagnosed according to the Second Edition of the International Classification of Headache Disorders (ICHD-2)[11]. Subsequently, oral and muscular assessments were respectively conducted by dentists and physical therapists. Trigger points, threshold for pain and the TMJ were rigorously assessed. TMD was diagnosed as per the *Research diagnostic criteria for temporomandibular disorders* (RDC)[6] Assessments were conducted from December 2005 to March 2006. Detailed methods have been previously described.[8-10]

The same investigators involved in the community-based assessment used the very same procedures to diagnose consecutive patients attended a University-based headache center in the first half of 2011.

The study followed the guidance of the regulatory norms of the Brazilian National Health Council (Resolution 196/1996) which is in accordance with the Helsinki Declaration. The protocol and all forms were reviewed and approved by the local ethics research committee.

Statistical Analysis

Headache characteristics and demographics were compared between groups. Data were transferred to Epi-info 2000 by a study coordinator and analysed using SPSS 12.0.

Headache frequency is presented by headache diagnosis and presence of DTM, and confidence intervals were calculated. Significance level has been established at the 5% level.

Non-parametric data between groups were compared using the Chi-Squared test or the Fischer test (when anticipated values were small). For continuous variables, the Mann-Whitney test was used.

The study followed the guidance of the regulatory norms of the National Health Council. (Resolution 196/1996). The protocol and all forms were reviewed and approved by the Investigation Review Board of the Federal Fluminense University and of the Federal University of Minas Gerais, Brazil.

RESULTS

In the community assessment, 1,605 inhabitants were interviewed and 57 (3.6%) had CDH. Of them, 43 completed all physical assessments. As for the specialty care, of 289 patients, 92 had CDH, and 85 completed all assessments.

Women were over-represented, both in the community sample (84.2%) and in the headache center (92.4%). Mean ages were respectively 42 and 43.3 years. Differences were not significant for age and gender. Education level was significantly lower among those from the comunity. Table 1 compares demographics between groups.

Three types of CDH were identified: chronic migraine (CM), chronic tension-type headache (CTTH) and headache attributed to excessive use medication (medication overuse headache – MOH). MOH was the most common form of headache in both groups and differences for headache subtypes were non significant (Table 2).

Among CDH sufferers from the population, prevalence of TMD was 58.1%; in the headache center it was 80%. Difference approached but did not reach significance ($p=0.07$). As for TMD subtype, muscular TMD happened in 30.2% of CDH patients from the community vs. 55.3% in the headache center. Other TMD types included mixed dysfunction (articular, such as capsulitis and synovitis and muscular), respectively present in 27.9% and 24.8% of patients. Differences of TMD types between groups were not significant (Table 3).

Discussion

TMD was frequent in both groups of patients with CDH. Although we expected this high prevalence in CDH patients from the tertiary care[12], we were surprised to find that nearly two- thirds of all community patients with CDH also had TMD, suggesting that a true comorbidity, and not spurious association, was found in previous studies. Groups were very similar for demographic features and headache types. The female predominance among CDH sufferers has been extensively reported[13]. Chronic migraine and MOH were the most common types of CDH. The association of TMD with CM (but not MOH) has been observed[14].

Migraine is a genetically predisposed disorder and is strongly influenced by environmental factors[15]. Several genetically determined abnormalities have been documented in the migraineur brain, including those in ionic neuronal and glial channels (mainly affecting sodium and calcium channels). Dysfunctions in neurotransmitters such as GABA and glutamate have also been documented. These dysfunctions may make the CNS more vulnerable to external or internal triggers[16]. The role of TMD in the development of CDHs is not fully understood. It may be that TMD acts as a trigger, or that the muscular tenderness associated with TMDs induces a pro-nociceptive state, thereby predisposing to other forms of pain[17]. An alternative explanation is possible, as well, and CDH could induce facial allodynia and TMD[18]. Finally, a unique biological predisposition or environmental risk factor could explain both CDH and TMD.

The pathophysiology of TTH is less known than the pathophysiology of migraine. TMD has also been suggested to be associated with chronic TTH (CTTH) [9]. The comorbidity may be explained by abnormal sensitization of peripheral nociceptors (that happens in both disorders) or by central mechanisms that yield an abnormal processing of painful stimuli[18]. Actually, some authors question if TMD and CTTH are unique entities in

individuals with both, or if they represent the same disorder[20,21]. While TTH is characterized by pain in the head, myofascial pain of TMD may cause pain in the head, face and neck. The phenotypes are so overlapping that the ICHD-2 even divides TTH in with or without pericranial tenderness and tender points in several muscular groups in the face and neck[11]. The RDC, in turn, defines myofascial pain as pain following muscular palpation in three or more muscular groups in the masticatory system[6]. Based on the level of overlapping, clinicians should take the message that detailed pericranial palpation is mandatory in all cases of CDH.

Because the phenotype of CDHs and TMDs sometimes overlap, conducting population-based studies on the comorbidity is challenging[22]. Common techniques of large studies include using telephone interviews conducted by trained interviewers which will identify symptoms as surrogates of diagnosis[23]. This is particularly complicated in the context of CDHs, since excessive use of analgesics may change the phenotype and final diagnosis involves withdrawing the offending substance[24].

In our study, all participants were assessed by experts in the field, and we strictly followed the ICHD-2 criteria (including phasing off analgesics before the diagnosis of MOH) [11]. Accordingly, all patients were followed for at least 8 weeks. Limitations of our study include the absence of a control group (without CDH) and the time lag between the assessments in the community and in the headache center. Furthermore, the transverse nature of our study limits causality assessment.

Our data suggest that individuals with CDH recruited from the population are not substantially different than those in the headache center regarding the presence of TMD and demographics. Accordingly, detailed clinic-based studies can be conducted, and issues of generalizability may not be of concern.

Table 1: Sociodemographic characteristics of individuals with chronic daily headaches recruited from a headache center and from the population

	Headache Center (n=92)	Population (n=57)	P-value
Gender			
Women	85 (92.4%)	48 (84.2%)	0.117*
Men	7 (7.6%)	9 (15.8%)	
Education			
Less than 8 years	42 (50%)	35 (83.3%)	0.001*
8-11 years	31 (36.9%)	5 (11.9%)	
More than 11 years	11 (13.1%)	2 (4.8%)	
Age			
Mean (SD)	42.0 (12.2)	43.3 (17.0)	0.888**
Range	16 – 68	13 - 78	

*Chi-squared test **Mann-Whitney.

Table 2 : Headache diagnosis in individuals with chronic daily headaches recruited from a headache center and from the population.

	Headache Center (n=92)		Population (n=57)		P value
	Prevalence	95% CI	Prevalence	95% CI	
Chronic Migraine	26.09%	[16.94; 35.26]	31.58%	[19.14; 44.02]	0.469*
Chronic tension-type headache	23.91%	[15.03; 32.80]	15.79%	[6.03; 25.55]	0.235*
Medication overuse headache	53.26%	[42.27; 63.65]	47.37%	[34.00; 60.73]	0.484*

*Chi-squared test **Mann-Whitney. CI = confidence interval.

Table 3: presence and subtype of temporo-mandibular disorder in individuals with chronic daily headaches recruited from a headache center and from the population

	Headache Center (n=92)	Population (n=57)	P-value
No TMD	17 (20.0%)	18 (41.9%)	
Muscular TMD	47 (55.3%)	13 (30.2%)	0.007*
Articular TMD	2 (2.4%)	0 (0.0%)	0.550**
Mixed TMD	19 (22.4%)	12 (27.9%)	0.488*

*Chi-squared test **Mann-Whitney.

REFERENCES

1 Silberstein SD, Lipton RB. Chronic daily headache. Curr Opin Neurol, 2000; 13(3): 277-28

2 Scher AI, Migdette LA, Lipton RB. Risk factors for headache classification. Headache, 2008; 48:16-25.

3 Bendstein L, Jensen R. Tension type headache. Neurol Clin, 2009;1:525-35.

4 Raphael KG, Marbach JJ, Klausner J. Myofascial face pain. Clinical characteristics of those with regional vs. widespread pain. J Am Dent Assoc, 2000. 131(2):161-71.

5 Franco AL, Gonçalves DAG, Castanharo SM, Speciali JG, Bigal ME, Camparis CM. Migraine is the Most Prevalent Primary Headache in Individuals with Temporomandibular Disorders. J Orofac Pain 2010;24:287-92.

6 Manfredini D, Chiappe G, Bosco M. Research diagnostic criteria for temporomandibular disorders (RDC/TMD) axis I diagnoses in an Italian patient population. J Oral Rehab, 2006; 33(8):551-8.

7 Gonçalves DAG, Bigal ME, Jales LCF, Camparis CM, Speciali JG. Headache and Symptoms of Temporomandibular Disorder: An Epidemiological Study. Headache 2010;50:231-41.

8 Silva-Junior AA, Krymchantowski A, Moreira P, Vasconcelos L, Gomez RS, Teixeira AL. Prevalence of Headache in the Entire Population of a Small City in Brazil. Headache 2009;49:895-899.

9 Silva-Junior AA, Costa EC, Gomes JB, Leite FM, Gomez RS, Vasconcelos LP, Krymchantowski A, Moreira P, Teixeira AL. Chronic Headache and Comorbidities: a Two-Phase, Population-Based, Cross-Sectional Study. Headache 2010;50:1306-12.

10 Silva Junior AA, Bigal M, Vasconcelos LP, Rodrigues J, Gomez RS, Krymchantowski AV, Moreira Filho P, Teixeira AL. Prevalence and Burden of Headaches as Assesses by the Health Family Program. Headache. 2012 Feb 21. doi: 10.1111/j.1526-4610.2012.02090.x. [Epub ahead of print]

11 Headache Classification Subcomitte of the International Headache Society. The Internacional Classification of Headache Disorders. 2nd Edition. Cephalalgia, 2004; 24:1-160.

12 Kang JK, Ryu JW, Choi JH, Merrill RL, Kim ST. Application of ICDH-II criteria for headaches in a TMJ and orofacial pain clinic. Cephalalgia 2009;30(1):37-41.

13 Stovner LJ, Hagen K, Jensen R, Katsarava Z, Lipton RB, Scher AI, *et al.*The global burden of headache: a documentation of headache prevalence and disability worldwide. Cephalalgia, 2007; 27:193-210.

14 Gonçalves DAG, Camparis CM, Speciali JG, Franco AL, Castanharo SM, Bigal ME. Temporomandibular Disorders are Differentially Associated with Headache Diagnoses: A Controlled Study. Clin J Pain 2011.

15 Cutrer FM, Charles A. The neurogenic basis of migraine. Headache, 2008; 48:1411-4.

16 Bigal ME, Ferrari M, Silberstein SD, Lipton RB, Goadsby PJ. Migraine in the triptan era: lessons from epidemiology, pathophysiology, and clinical science. Headache, 2009; 49:S21-S33.

17 Stuginski-Barbosa J, Macedo HR, Bigal ME, Speciali JG. Signs of temporomandibular disorders in migraine patients: a prospective, controlled study. Clin J Pain. 2010 Jun;26(5):418-21

18 Bevilaqua-Grossi D, Lipton RB, Napchan U, Grosberg B, Ashina S, Bigal ME. Temporomandibular disorders and cutaneous allodynia are associated in individuals with migraine. Cephalalgia. 2010 Apr;30(4):425-32.

19 Svensson P. Muscle pain in the head: overlap between temporomandibular disorders and tension-type headaches. Curr Opin Neurol, 2007; 20:320-325.
20 Ballegaard V, Thede-Schmidt-Hansen P, Svensson P, Jensen R. Are headache and temporomandibular disorders related? A blinded study. Cephalalgia 2008;28:832-41.
21 Özkan NÇ, Özkan F. The relationship of temporomandibular disorders with headaches: a retrospective analysis. Agri 2011;23(1):13-17.
22 Gonçalves DAG Speciali JG, Jales LCF, Camparis CM, Bigal ME. Temporomandibular symptoms, migraine and chronic daily headaches in the population. Neurology 2009;73:645-6.
23 Gonçalves AGG, Fabbro ALD, Campos JADB, Bigal ME, Speciali JG. Symptoms of temporomandibular disorders in the population: an epidemiological study. J Orofac Pain 2010;24(3):270-8.
24 Silva-Junior AA, Faleiros BE, Santos TM, Gómez RS, Teixeira AL. Relative frequency of headache types: a longitudinal study in the tertiary care. Arq Neuropsiquiatr 2010;68(6).

6 DISCUSSÃO

A discussão dos achados específicos de cada artigo, realizada à luz das evidências científicas, foi feita nos próprios artigos. Nesta seção procurou-se discutir os resultados de forma mais integrada.

A maioria da população estudada de Capela Nova (65,4%) apresentava cefaleia nos 12 meses anteriores à entrevista, tendo sido mais prevalente nas mulheres, como vem sendo demonstrado universalmente, ainda que as taxas variem, dependendo da região e do método de coleta de dados entre 46 e 80%[12,26-28].

As mulheres também foram maioria entre os casos de migrânea e CTT comparando a amostra da comunidade com pacientes atendidos no AmbCef-UFMG, mas houve proporcionalmente mais homens com cefaleia na amostra populacional do que no ambulatório, possivelmente porque a dor é mais incapacitante nas mulheres[3]. A média de idade dos dois grupos foi praticamente a mesma, mas a escolaridade dos habitantes de Capela Nova foi mais baixa, dado esperado para uma população com essa faixa etária de uma região da zona rural brasileira[37].

A prevalência de migrânea na amostra populacional esteve próximo do limite superior dos estudos de base populacionais brasileiros[22-25,31]. A taxa de CTT foi mais alta que no estudo nacional brasileiro[30], mas bem mais baixa do que em outros trabalhos[4] Observa-se que os estudos populacionais mostram resultados muito divergentes para esse tipo de cefaleia[12].

No ambulatório, a ampla maioria dos casos foi decorrente de migrânea, como foi visto em outras pesquisas[34,43], enquanto a CTT esteve presente em apenas um quinto dos pacientes avaliados. A comparação das frequências desses dois tipos de cefaleias primárias mostrou que a CTT é mais frequente na comunidade e a migrânea no centro especializado. Esse achado reforça a hipótese de que a CTT é mais comum, porém menos impactante, enquanto a migrânea é a principal causa de cefaleia que leva ao atendimento médico[2,31]

A comparação do perfil sociodemográfico e da frequência dos tipos de cefaleia envolvidos na CCD não mostrou diferença entre os moradores de Capela

Nova e os pacientes do AmbCef-UFMG com essa síndrome. As mulheres da segunda à quarta década de vida foram as mais acometidas e a causa mais comum de CDD foi a migrânea (crônica ou associada à MOH), como encontrado em outros estudos[44]. Isso sugere que o desenvolvimento da CCD, principalmente nos casos decorrentes de migrânea, depende mais de fatores neurobiológicos do que de fatores ambientais.

Parece que, embora a migrânea sofra influência ambiental, existe uma base biológica em sua fisiopatologia. Ainda que não se saiba completamente o mecanismo, acredita-se hoje que ocorram anormalidades geneticamente determinadas em canais iônicos de neurônios, especialmente canais de sódio e cálcio, além de alterações nos sistemas neurotransmissores, com aumento de produção de neurotransmissores excitatórios (glutamato) e diminuição de produção de neurotransmissores inibitórios (GABA). Essas anormalidades resultam em hiperexcitabilidade cortical, tornando o sistema nervoso central dos migranosos susceptíveis a estímulos internos e externos, os chamados "gatilhos"[45,46].

A outra causa de CCD presente nos dois cenários foi a CTT crônica. Como citado anteriormente, os dados de CTT geralmente são divergentes e os estudos esbarram em questões operacionais desafiadoras[30]. Isso porque a CTT mostra um padrão clínico polimórfico e estudos comparativos sobre esse tipo de cefaleia são mais difíceis e têm menos homogeneidade[12]. De todo modo, vimos que, enquanto a frequência de CTT episódica é diferente na população e no centro terciário, a frequência de CTT crônica nos dois cenários é similar, possivelmente porque essa forma é mais incapacitante e também acaba levando o indivíduo a procurar assistência médica. Ainda assim, sua frequência é bem mais baixa do que as formas crônicas de migrânea. Um dos motivos da CTT crônica ser menos frequente que as formas crônicas de migrânea é a sobreposição do quadro clínico de CTT crônica e de dor miofascial, quando esta acomete a cabeça, face e pescoço[47].

Em estudo que comparou a casuística de pacientes do AmbCef-UFMG com um ambulatório odontológico de dor orofacial, revelou-se que a CTT crônica foi o principal tipo de cefaleia na casuística de pacientes com DTM desse serviço[48]. A hipótese é de que indivíduos com CTT crônica procuram serviços odontológicos especializados em dor orofacial em vez de ambulatórios médicos,

pois o quadro clínico é muito parecido com o de DTM muscular orofacial. O papel dessa condição na cronificação da CTT é decorrente do aumento da sensibilidade dolorosa de estruturas miofasciais pericranianas e hipersensibilidade de neurônios de segunda ordem do trato espinhal do trigêmeo[4]. Assim, é possível que o estímulo nociceptivo crônico de estruturas periféricas desencadeie hipersensibilidade central e contribua para a cronificação da CTT[4]. Mas esse mecanismo de cronificação não é exclusivo de CTT. Pelo contrário, os estudos têm mostrado que expressivo número de pacientes com migrânea apresenta DTM como comorbidade[49], como visto neste estudo.

A existência desse tipo de comorbidade reforça a ideia de que estudos epidemiológicos com cefaleias sejam realizados por profissionais habilitados que integram equipes multiprofissionais e interdisciplinares. Parece inviável a palpação da musculatura pericraniana por entrevistador leigo, ainda que treinado, bem como a identificação de mais de um tipo de cefaleia no mesmo indivíduo. Em significativa parcela dos casos investigados, tanto na comunidade de Capela Nova como no AmbCef-UFMG, a migrânea e a CTT mostraram-se associadas, como descrito na literatura[8].

Existe outra associação importante nos casos de CCD, que é com a MOH. O uso excessivo de analgésico tende a mudar as características semiológicas da cefaleia primária episódica prévia à cronificação[50]. No caso da migrânea, as características clássicas das crises, como cefaleia unilateral, intensa e pulsátil, vão dando lugar a uma dor mais leve e diária, que tem as características de CTT, piorando em torno de duas vezes por semana com o padrão de cefaleia mais intensa com foto e fonofobia[3]. A investigação desse tipo de fenômeno por entrevistadores leigos também parece inviável.

Esse foi um dos motivos pelos quais a campanha conduzida com a participação da Organização Mundial de Saúde (OMS) para o enfrentamento global do impacto da cefaleia salientou que o primeiro passo, em países como o Brasil, é a realização de estudos epidemiológicos com metodologia “padrão-ouro”[12]. Ou seja, o estudo nacional brasileiro com entrevistadores leigos, por telefone[29-31] não foi suficientemente representativo para definir a dimensão do problema que a cefaleia representa na população brasileira.

Apesar da metodologia utilizada na presente pesquisa - entrevista direta com especialistas - ser considerada a ideal, houve limitações que merecem ser

mencionadas. Cita-se a falta de investigação do impacto das cefaleias em todos os grupos e de outros fatores que têm sido referidos na cronificação da cefaleia, como o aumento do índice de massa corporal e distúrbios do sono[3].

A compreensão adequada dos dados obtidos a partir das comparações só poderá ser feita com a realização de novos estudos com esta metodologia. Isso porque não foram encontrados na literatura outros trabalhos que utilizassem uma mesma equipe avaliando indivíduos da comunidade com pacientes de um ambulatório especializado. A implicação prática disso é importante, pois, a princípio, acredita-se que existam diferenças substanciais entre esses grupos[51]. Mas não foi o que se viu nos casos de CCD.

Finalmente, a metodologia aqui utilizada parece absolutamente factível de ser realizada em diferentes regiões brasileiras, ou seja, a estrutura da atenção primária brasileira, que dispõe de 250.000 agentes comunitários de saúde, poderia ser aproveitada na triagem dos casos para as avaliações especializadas de centros de referências bem estabelecidos em diversas cidades brasileiras. Estudo dessa natureza poderia ser o próximo passo para o enfrentamento da cefaleia no Brasil.

7 CONCLUSÕES

- A cefaleia é um sintoma muito prevalente na população. As causas mais comuns na comunidade são a CTT e a migrânea.
- A migrânea é o principal tipo de cefaleia que mais demanda atendimento médico, causando mais impacto que a CTT, e acomete principalmente as mulheres da segunda à quarta década de vida.
- A CTT é mais frequente na comunidade do que no centro terciário.
- As mulheres são mais acometidas pela cefaleia em todos os cenários. Mas o percentual de homens com cefaleia migrânea e CTT é mais alto na comunidade, se comparada ao centro terciário.
- As cefaleias primárias frequentemente mostram-se associadas na mesma pessoa.
- A CCD, tanto na comunidade como no ambulatório, é causada principalmente por migrânea associada à MOH, migrânea crônica e CTT crônica, não havendo diferenças na frequência dos tipos.
- Os casos de CCD apresentam-se frequentemente associados à DTM, principalmente a dor miofascial.

8 PROPOSIÇÃO E PERSPECTIVA

No Brasil precisam ser feitos estudos de base populacional sobre cefaleia, com entrevista face a face com equipes de profissionais habilitados, para investigar a dimensão real do problema. A metodologia utilizada neste trabalho, envolvendo os agentes comunitários de saúde na triagem dos casos, parece viável de ser replicada em diversas regiões brasileiras.

Poderiam ser criados programas de prevenção na atenção primária, orientando os agentes comunitários de saúde para que alertem mulheres com cefaleia recorrente e incapacitante a procurarem assistência médica e evitarem o uso excessivo de analgésicos. Nesse sentido, os médicos da comunidade também precisam ser capacitados no diagnóstico e no manejo clínico da migrânea.

Os centros especializados de atendimento, por sua vez, devem ter abordagem multiprofissional e interdisciplinar, principalmente para a condução dos casos de CCD.

REFERÊNCIAS

1 Rasmussen BK, Jensen R, Olesen J. A population-based analysis of the diagnostic criteria of the International Headache Society. Cephalalgia, 1991; 11(3):129-34.

2 Tepper SJ, Dahlöf CG, Dowson A, Newman L, Mansbach H, Jones M, *et al*. Prevalence and diagnosis of migraine in patients consulting their physician with a complaint of headache: data from the Landmark Study. Headache, 2004; 44(9):856-64.

3 Lipton RB, Bigal ME. Migraine: epidemiology, impact, and risk factors for progression. Headache, 2005; 45(Suppl 1):S3-S13.

4 Bendstein L, Jensen R. Tension type headache. Neurol Clin, 2009;1:525-35.

5 Silberstein SD, Lipton RB. Chronic daily headache. Curr Opin Neurol, 2000; 13(3): 277-283.

6 Srikiatkhachorn A, Phanthumchinda K. Prevalence and clinical features of chronic daily headache in a headache clinic. Headache, 1997; 37(5):277-280.

7 Scher AI, Migdette LA, Lipton RB. Risk factors for headache classification. Headache, 2008; 48:16-25.

8 Headache Classification Subcomitte of the International Headache Society. The Internacional Classification of Headache Disorders. 2nd Edition. Cephalalgia, 2004; 24:1-160.

9 Rasmussen BK, Jensen R, Olesen J. Questionnaire versus clinical interview in the diagnosis of headache. Headache, 1991; 31(5):290-5.

10 Rasmussen BK. Epidemiology of headache. Cephalalgia, 1996; 15(1):45-68.

11 Lipton RB, Scher AI, Kolodner K, Liberman J, Steiner TJ, Stewart WF. Migraine in the United States: epidemiology and patterns of health care use. Neurology, 2002; 58(6):885-94.

12 Stovner LJ, Hagen K, Jensen R, Katsarava Z, Lipton RB, Scher AI, *et al.*The global burden of headache: a documentation of headache prevalence and disability worldwide. Cephalalgia, 2007; 27:193-210.

13 Millea PJ, Brodie JJ. Tension-Type Headache. Am Fam Physician, 2002; 1;66(5):797-805.

14 Manfredini D, Chiappe G, Bosco M. Research diagnostic criteria for temporomandibular disorders (RDC/TMD) axis I diagnoses in an Italian patient population. J Oral Rehab, 2006; 33(8):551-8.

15 Raphael KG, Marbach JJ, Klausner J. Myofascial face pain. Clinical characteristics of those with regional vs. widespread pain. J Am Dent Assoc, 2000. 131(2):161-71.

16 Bastos SB, Almeida Filho N, Santana VS. Prevalence of headache as an symptom in a urban area of Salvador, Bahia. Arq Neuropsiquiatr, 1993; 51(3):307-12.

17 Barea LM, Tannhauser M, Rotta NT. An epidemiologic study of headache among children and adolescents of southern Brazil. Cephalalgia, 1996; 16(8):545-49.

18 Bigal ME, Fernandes LC, Moraes FA, Bordini CA, Speciali JG. Migraine prevalence and impact in employees of the clinical hospital of the medical school of RibeirãoPreto-USP. Arq Neuropsiquiatr, 2000; 58(2B):431-36.

19 Sanvito WL, Monzillo PH, Peres MF, Martinelli MO, Fera MP, Gouveia DA, *et al*. The epidemiology of migraine in medical students. Headache, 1996; 36(5):316-19.

20 Costa MZ, Soares CB, Heinisch LM, Heinisch RH Frequency of headache in the medical students of Santa Catarina's Federal University. Headache, 2000; 40(9):740-44.

21 Wiehe M, Fushs SC, Moreira LB, Fuschs SD. Migraine is more frequent in individuals with optimal and normal blood pressure: a population based study. J Hipertens, 2002; 20(7):1303:6.

22 Morillo LE, ALarcon F*,* Aranaga N, Aulet S, Chapman E, Conterno L, *et al.*Prevalence of migraine in America Latina. Headache, 2005; 45(2):106-17.

23 Fernandes LC. Estudo epidemiológico da prevalência de cefaleia na cidade de Ribeirão Preto. Teshis. Ribeirão Preto: Universidade de São Paulo; 2004.

24 Pahim LS, Menezes AM, Lima R. Prevalence and factors associated to migraine in adult population, Southern Brazil]. Rev Saude Publica, 2006; 40(4):692-8, 2006.

25 Queiroz LP, Barea LM, Blank N. An epidemiological study of headache in Florianopolis, Brazil. Cephalalgia, 2006; 26(2):122-7.

26 Domingues RB, Kuster GW, Santos LA, Guimarães JG. Headacheepidemiology in Vitória, ES. Arq Neuropsiq, 2004; 62:588-591.

27 Domingues RB, Henriques CCH, Silva ALP, Guimarães JS, Kuster GW. Prevalence and impact of headache and migraine among Pomeranians in Espírito Santo, Brazil. Arq Neuropsiq, 2006; 64:954-957.

28 Cezar PB, Schmidt Filho J, Brito FLC, Moraes Filho MN, Marchiori J, Domingues SCA. Prevalence and impacto oh headache and migranineamong braziliantupiniquimindians. Arq Neuropsiq, 2009; 67:413-415.

29 Queiroz LP, Peres MFP, Kowacs F, Piovesan EJ, Ciciarelli MC, Souza JA, *et al*. Chronic daily headache in Brazil: a nationwide population based study. Cephalalgia, 2008; 28:1264-69.

30 Queiroz LP, Peres MFP, Piovesan EJ, Kowacx F, Ciciarelli MC, *et al*. A nationwide population-based study of tension type headache in Brazil. Headache, 2009; 49:71-8.

31 Queiroz LP, Peres MFP, Piovesan EJ, Kowacs F, Ciciarelli MC, Souza JA, *et al*. A nationwide population-based study of migraine in Brazil. Cephalalgia, 2009; 29:642-649.

32 Arruda MA, Guidetti V, Galli F, Albuquerque RC, Bigal ME. Primary Headache in childhood: a population-based study. Cephalagia, 2010; 30(9):1056-64.

33 Vasconcelos LPB, Stancioli FG, Leal JC, Costa EAC, Silva Jr AA, Gómez RS, *et al.* Cefaleias em serviço especializado. Migrâneas & Cefaleias, 2006; 9(1):4-7.

34 Felício AC, Bichuetti DB, Santos WA, Godeiro Junior CO, Marin LF, Carvalho DS. Epidemiology of primary and secondary headaches in a Brazilian tertiary-care center. Arq Neuropsiquiatr, 2006; 64(1):41-46.

35 Krymchantowski AV, Moreira Filho PF. Cefaleia crônica diária primária: apresentação clínica. Arq Neuropsiquiatr, 2000; 58:437-51.

36 Silva-Júnior AA, Faleiros BE, Santos, TM, Gomez RS, Teixeira AL Jr. Relative Frequency of Headaches Types- A Longitudinal Stdy in the Tertiary Care. Arq Neuropsiquiatr, 2010; 68:878-81.

37 IBGE. Instituto Brasileiro de Geografia e Estatística. Censo de 2000.

38 Stewart WF, Lipton RB, Kolodner KB, Sawyer J, Lee C, Liberman JN. Validity of the Migraine Disability Assessment (MIDAS) score in comparison to a diary-based measure in a population sample of migraine sufferers. Pain, 2000; 88(1):41-52.

39 Kosinski M, Bayliss MS, Bjorner JB, Ware JE, Jr., Garber WH, Batenhorst A, *et al*. A six-item short-form survey for measuring headache impact: the HIT-6. Qual Life Res, 2003;12(8):963-974.

40 Lipton RB, Bigal ME, Amatniek JC, Stewart WF. Tools for diagnosing migraine and measuring its severity. Headache, 2004; 44(5):387-398.

41 Gorenstein C, Andrade L. Validation of a Portuguese version of the Beck Depression Inventory and the State-Trait Anxiety Inventory in Brazilian subjects. Braz J Med Biol Res, 1996; 29(4):453-457.

42 Hosmer DW, Hosmer T, Le Cessie S, Lemeshow S. A comparison of goodness-of-fit tests for the logistic regression model. Stat Med, 1997 May 15; 16(9):965-80.

43 Dowson AJ. Analysis of the patients attending a specialist UK headache clinic over a 3-year period. Headache, 2003; 43:14-18.

44 Meskunas CA, Tepper SJ, Rapoport AM, Sheftell FD, Bigal ME. Medications associated with probable medication overuse headache reported in a tertiary care headache center over a 15-year period. Headache, 2006; 46(5):766-772.

45 Bigal ME, Ferrari M, Silberstein SD, Lipton RB, Goadsby PJ. Migraine in the triptan era: lessons from epidemiology, pathophysiology, and clinical science. Headache, 2009; 49:S21-S33.

46 Cutrer FM, Charles A. The neurogenic basis of migraine. Headache, 2008; 48:1411-4.

47 Svensson P. Muscle pain in the head: overlap between temporomandibular disorders and tension-type headaches. Curr Opin Neurol, 2007; 20:320-325.

48 Silva-Junior AA, Lara RP, Faleiros BE, Tavares RM, Santos TM, Silva LMP, *et al*. Comparação entre as características das cefaleias primárias e disfunções têmporo-mandibulares em um centro terciário de cefaleia e um centro odontológico de dor orofacial. Headache Med, 2010; Abstract.

49 Gonçalves AGD, Bigal ME, Jales LC, Camparis CM, Speciali JG, *et al*. Headache and symptoms of temporomandibular disorder: An epidemiological study. Headache, 2010; 50:231-241.

50 Chronic daily headache Stephen D. Silberstein and Richard B. Lipton, Curr Opin Neurol, 2000; 13:277-283.

51 Gantenbein AR, Kozak S, Agosti F, Agosti R, Isler H. Headache patients in primary care and a tertiary care unit in Zürich, Switzerland. Cephalalgia, 2006; 26:1451-57.

APÊNDICES E ANEXO

Apêndice A – Procefaleia

Anamnese:

1) Há quanto tempo você tem dor de cabeça?

▫ Menos de 6 meses ▫ Entre 6 meses e 1 ano
▫ Entre 1 e 3 anos ▫ Mais de 3 anos
▫ Mais de 10 anos. Especifique:
_____

2) Sua dor de cabeça ficou mais frequente (vindo mais vezes) ou mais forte de algum tempo pra cá?

▫ Sim ▫ Não
▫ Há quanto tempo?
_____

3) Geralmente, como é sua dor de cabeça?

▫ Pulsa/lateja
▫ É tipo peso/pressão
▫ Queima/arde
▫ Parece com choques no rosto
▫ Outro tipo? Qual?
_____

4) Geralmente, sua dor de cabeça é:

▫ Na frente da cabeça
▫ Na lateral da cabeça
▫ Na frente e na lateral da cabeça
▫ Só de um lado, sendo sempre do mesmo lado? Qual? _____
 Só de um lado, sendo cada vez de um lado
▫ No topo da cabeça
▫ Na parte de trás da cabeça
▫ Difusa em toda cabeça
▫ Envolvendo o pescoço

5) Geralmente, sua dor de cabeça (na maior parte do tempo):

▫ É leve ▫ É média ▫ É forte

6) Geralmente, sua dor de cabeça:

▫ Começa leve e aumenta
▫ Começa forte e diminui
▫ Começa e fica de igual intensidade

7) Geralmente, sua dor de cabeça:

▫ É acompanhada de enjoo
▫ É acompanhada de vômitos
▫ A claridade incomoda mais do que quando está sem dor
▫ Os barulhos incomodam mais do que quando está sem dor de cabeça
▫ Os cheiros incomodam mais do que quando sem dor nenhuma

8) Geralmente, durante a sua dor, você:

- ▫ Prefere caminhar ou se exercitar
- ▫ Prefere ficar quieto e recolhido a um canto escuro e tranqüilo
- ▫ É indiferente a isto
- ▫ Outros

9) Geralmente, sua dor de cabeça dura:

- ▫ Até 2 horas (mesmo com remédio)
- ▫ Até 4 horas (mesmo com remédio)
- ▫ Até 6 horas (mesmo com remédio)
- ▫ Entre 6 e 10 horas (mesmo com remédio)
- ▫ Mais de 12 horas (mesmo com remédio)
- ▫ Mais de 24 horas (mesmo com remédio)

Especifique a duração média: _____

Nome:
_____data___/____/____prontuário_____
Sexo:_____Idade:_____Raça:_____E. civil_____
Endereço Residencial: _____
_____
Telefone: (____) _____Naturalidade: _____
Escolaridade: _____Profissão_____

10) Você GERALMENTE, sente dor de cabeça (MESMO LEVE):

- ▫ Menos de 1 vez por mês
- ▫ 1 vez por mês
- ▫ 1 dia por semana
- ▫ 2 dias por semana
- ▫ 3 dias por semana
- ▫ 4 dias por semana
- ▫ 5 dias por semana
- ▫ 6 dias por semana
- ▫ 7 dias por semana

11) Você GERALMENTE toma remédios para a sua dor de cabeça?

▫ Sim ▫ Não

12) Quantas vezes por semana você GERALMENTE toma remédios para a sua dor de cabeça?

- ▫ Menos de 1 vez a cada 10 dias
- ▫ Menos de 1 vez a cada 7 dias
- ▫ 1 dia por semana
- ▫ 2 dias por semana
- ▫ 3 dias por semana
- ▫ 4 dias por semana
- ▫ 5 dias por semana
- ▫ 6 dias por semana
- ▫ 7 dias por semana

13) Quantos tipos de remédios você GERALMENTE toma para crise de dor de cabeça?

- ▫ 1 tipo de remédio
- ▫ 2 tipos de remédio
- ▫ 3 tipos de remédio
- ▫ Mais de 3 tipos de remédio

14) Antes da sua dor de cabeça, você apresenta aura ou pródomos:

▫ Pontos brilhantes, manchas ou linhas na visão
▫ Fadiga ▫ Bocejos ▫ Formigamentos, dormência ▫ Alteração de apetite
▫ Dificuldade transitória para falar ▫ Alteração de humor ▫ Alteração de consciência
▫ Outros?_____

15) Durante sua dor de cabeça, você apresenta:

▫ Um dos olhos vermelhos. Qual? _____
▫ Lacrimejamento em um dos olhos. Qual? _____
▫ Um lado do nariz entupido. Qual? _____

16) Sua dor de cabeça tem horário preferencial?

▫ Madrugada
▫ Manhã
▫ Tarde
▫ Noite
▫ Acorda no meio da noite com dor, mesmo quando deitou sem ela
▫ Acorda pela manhã com dor, mesmo quando deitou sem ela.

17) Quais medicamentos você já usou para sua dor de cabeça?

▫ Neosaldina ▫ Cefaliv ▫ Naramig ▫ Atenolol ▫ Topamax ▫ Ormigrem ▫ Cefalium ▫ Sumax ▫ Flunarizina ▫ Sandomigran ▫ Paracetamol ▫ Dipirona ▫ Zomig ▫ Amitriptilina ▫ Deserila ▫ AAS ▫ Dorflex ▫ Maxalt ▫ Nortriptilina ▫ Diazepínicos ▫ Naproxeno ▫ Tandrilax ▫ Propranolol ▫ Depakote
▫ Outros? Quais? _____

18) Há algum fator que já desencadeou claramente a sua dor, mesmo que uma ou duas vezes?

▫ Queijo amarelo ▫ Doces ▫ Salsichas ▫ Chocolate
▫ Banana ▫ Laranja ▫ Pêssego ▫ Abacaxi
▫ Limão ▫ Presunto ▫ Salame ▫ Vinho tinto
▫ Cerveja ▫ Chope ▫ Champanhe ▫ Muito sol
▫ Jejum prolongado ▫ Estresse ou ansiedade ▫ Dormir menos ▫ Dormir mais
▫ Cheiros fortes ▫ Menstruação (Antes-durante-depois)
▫ Aspartame ▫ Outros?_____

19) Há casos de dor de cabeça, mesmo diferente da sua, na sua família?

▫ Avô paterno ▫ Avô materna ▫ Avó paterno ▫ Avó materna
▫ Tio paterno ▫ Tia materna ▫ Tio paterno ▫ Tia materna
▫ Pai ▫ Mãe ▫ Irmão ▫ Irmã
▫ Filha ▫ Filho ▫ Sobrinho ▫ Sobrinha
▫ Primo ▫ Prima

20) Assinale quais as especialidades de profissionais, você já procurou ESPECIFICAMENTE por causa de sua dor de cabeça?

▫ Pediatra ▫ Clínico Geral ▫ Oftalmologista
▫ Otorrinolaringologista ▫ Neurologista ▫ Neurocirurgião
▫ Ortopedista ▫ Homeopatia ▫ Acupunturista
▫ Dentista (Só para a sua dor de cabeça) ▫ Outros? Quais? _____

21) Está tratando de alguma doença?Usando medicação mesmo para dor?

▫ Sim. Quais e quanto? _____
▫ Não. Tem alergia a algum medicamento? Qual? _____

22) Existe alguma doença que ocorre com freqüência em sua família?

▫ Sim. Quais? _____

 Não. Diabetes tipo I Neoplasia cerebral

▫ AVE hemorrágico ▫ Neoplasia

23) Você já teve alguma doença no passado ou realizou cirurgia?

▫ Asma e Bronquite ▫ Tuberculose ▫ Meningite ▫ Hipertensão

▫ Diabetes ▫ Coma ▫ Epilepsia ▫ Convulsões

▫ Doença hepática ▫ Doença renal ▫ Transfusão ▫ Gravidez _____

▫ Litíase ureteral ▫ Cirurgias ▫ Traumatismo crânio-encefálico ou raquimedular

▫ Outras? ▫ Especifique datas e tipo_____

▫ Não._____

Exame

1) Exame físico:

Pressão arterial: _____ mmHg

Frequência cardíaca: _____ bpm

Descrição:

_____

_____

_____

2) Exame Neurológico:

Ectoscopia:

_____

Orientação:_____

_____

Equilíbrio e marcha: _____

Fala e voz: _____

Reflexos superficiais e profundos: _____

Pares cranianos: _____

Fundo de olho: _____

Força muscular, tônus e trofismo:

_____

Palpação da cabeça e pescoço:_____

_____

Inspeção:

_____

Consciência:

_____

Marcha, Equilíbrio e Coordenação:

_____

Sensibilidade:

_____

Descreva aqui outros aspectos importantes do exame físico: _____

_____

_____

_____

_____

Diagnóstico:

Tipo de Diagnósticos: (selecione o tipo!)

- ▫ Migrânea com aura
- ▫ Migrânea sem aura
- ▫ Migrânea com e sem aura
- ▫ Cefaleia do tipo tensional (CTT). Qual?

_____

- ▫ Cefaleia em salvas e outras cefaléias trigêmino-autonômicas
- ▫ Outras cefaleias primárias
- ▫ Cefaleia atribuída a trauma cefálico e/ou cervical
- ▫ Cefaleia atribuída a doença vascular craniana ou cervical
- ▫ Cefaleia atribuída a transtorno intracraniano não vascular
- ▫ Cefaleia atribuída a uma substância ou a sua supressão
- ▫ Cefaleia atribuída a infecção
- ▫ Cefaleia atribuída a transtorno da homeostase
- ▫ Cefaleia ou dor facial atribuída a transtorno do crânio, pescoço, olhos, ouvidos, nariz, seios da face, dentes, boca ou outras estruturas faciais ou cranianas.
- ▫ Cefaleia atribuída a transtorno psiquiátrico
- ▫ Outra cefaleia, neuralgia craniana e dor facial central ou primária

Tratamento:

Tratamento Agudo:

Profilaxia:

Evolução:

Apêndice B – Termo de consentimento livre e esclarecido

Título do Projeto: Comparação das características das cefaleias primárias na comunidade com as de um centro terciário de atendimento

Pesquisador Responsável: Ariovaldo Alberto da Silva Junior CRM-MG 32762

telefones para contato: (31) 8748.1175 - (31) 32670515

Instituição: Universidade Federal de Minas Gerais.

Nome do participante: _____

Idade: _____ anos R.G.:_____

Eu, ..., abaixo assinado, ou responsável legal pelo meu parente próximo, ..., declaro que saber que:

1) O objetivo desta pesquisa é saber o diagnóstico de sua dor de cabeça, o impacto que ela causa em sua vida e se existe algum problema relacionado a ela. Tanto os fatores emocionais (transtornos psiquiátricos) ou de dor no pescoço e na face (disfunção têmporo-mandibular).
2) Para isto, você deverá ser avaliado por neurologistas, dentistas, fisioterapeutas, psicólogos e psiquiatras. Além disto, você deverá responder questionários sobre sua qualidade de vida e sobre como sua dor de cabeça afeta seu dia-a-dia.
3) Os resultados de sua avaliação serão comparados aos dos moradores de uma pequena cidade de Minas Gerais (Capela Nova) e serão divulgados em revistas científicas. Mas seu nome será mantido em sigilo. Ou seja, sua participação será mantida de forma confidencial e sua privacidade será respeitada. Só os dados de sua entrevista é que serão analisados.
4) Benefícios: esta comparação servirá para oferecer sugestões às autoridades públicas de saúde de como tentar aliviar o sofrimento das pessoas que sofrem de dor de cabeça.
5) Você será informado sobre qualquer dúvida sobre os assuntos relacionados com a pesquisa e sobre sua participação individual.
6) Você poderá retirar o seu consentimento a qualquer momento e deixar de participar do estudo, sem que isso traga prejuízo ao seu tratamento.

Belo Horizonte, _____ de _____ de_____

Eu, _____, RG nº _____ declaro ter sido informado e concordo em participar, como voluntário, do projeto de pesquisa acima descrito.

Anexo A – Parecer ético

UNIVERSIDADE FEDERAL DE MINAS GERAIS
COMITÊ DE ÉTICA EM PESQUISA - COEP

Parecer nº. ETIC 0500.0.203.000-10

Interessado(a): Prof. Antônio Lúcio Teixeira Júnior
Departamento de Clínica Médica
Faculdade de Medicina - UFMG

DECISÃO

O Comitê de Ética em Pesquisa da UFMG – COEP aprovou, no dia 13 de janeiro de 2011, após atendidas as solicitações de diligência, o projeto de pesquisa intitulado **"Comparação das características das cefaléias primárias na comunidade com as de um centro terciário de atendimento"** bem como o Termo de Consentimento Livre e Esclarecido.

O relatório final ou parcial deverá ser encaminhado ao COEP um ano após o início do projeto.

Profa. Maria Teresa Marques Amaral
Coordenadora do COEP-UFMG

Av. Pres. Antonio Carlos, 6627 – Unidade Administrativa II - 2º andar – Sala 2005 – Cep:31270-901 – BH-MG
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Artigo 8

Psychiatric comorbidities of chronic migraine in community and tertiary care clinic samples

Running title: Psychiatry of chronic migraine

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Abstract

Background: Although the association between episodic migraine and psychiatric comorbidities is well documented, few studies have focused on the comorbidity with chronic migraine (CM) and discrepancies exist between population-based and clinic-based data.

Objectives: To compare demographic and psychiatric comorbidity correlates between CM samples drawn from the community and tertiary care.

Methods: All inhabitants from a city borough were interviewed for the presence of headaches occurring 15 or more days per month. CM and probable CM (pCM) were diagnosed after subjects had been interviewed and examined by a headache doctor. Participants were also assessed with a structured interview by a psychiatrist, who assigned diagnoses based on the DSM-IV. The same investigators assessed all patients consecutively seen in a University-based outpatient headache center over a 4 month period.

Results: The samples consist of 41 individuals from the community and 43 from the headache center. Sociodemographic profiles were similar between groups with the exception of the mean number of years of formal education. Among individuals from the community, psychiatric diagnoses were present in 65.9% of cases, relative to 83.7% in those from the headache center (p=0.06). The relative frequencies of specific diagnoses were not significantly different between the community and the headache center: phobias (29.3% vs. 41.9%), generalized anxiety disorder (39% vs. 34.9%) and depression (29.3% vs. 32.6%).

Conclusion: The frequency of psychiatric conditions in patients with CM/pCM is high, but does not to differ between community and specialty care clinics.

Keywords: Migraine; chronic migraine; comorbidity; depression; anxiety.

Introduction

Migraine is the leading neurological cause for seeking medical care [1], and is associated with significant disability in the sufferer [2]. The greatest impact is on migraineurs with headaches on more days than not [3], a condition defined as chronic migraine (CM) [4].

CM evolves from episodic migraine (EM) and is defined as at least 15 days of headache per month in which half of the days fulfill migraine criteria and/or are treated with specific migraine medications, in the absence of a diagnosis of medication overuse headache (MOH) [4]. The distinction between CM and MOH requires the withdrawal of the potentially offending medication and, thus, can only be done in longitudinal assessments. As a consequence, in cross-sectional studies, the distinction between CM and MOH is often difficult, and subjects end up receiving a diagnosis of probable CM (pCM). Actually, studies sometimes pool CM and pCM in a single group [5].

Among migraineurs, defining risk factors for CM, or for the progression of EM to CM, is an issue of scientific and public health interest [3]. Identified risk factors include medication overuse, obesity, sleep problems, and psychiatric comorbidity [6-11]. Nonetheless, population studies fail to conduct face-to-face assessments, and clinic-based studies carry the potential for selection bias.

Studies focusing on best methods to address this gap are of interest, and one strategy is to compare data obtained from the community with those from specialty care, where methods of collection have been virtually identical, and that was the scope of this study. We compared demographic data and psychiatric comorbidity in a sample of individuals with CM/pCM from the community with another from a tertiary care clinic. In light of the fact that patients suffering from migraine and comorbid psychiatric disorders are greater

health care service users [12], we hypothesized that the frequency of psychiatric disorders, notably depression, is higher in patients followed in tertiary care.

Methods

Community data were gathered in Capela Nova, a city from the state of Minas Gerais, Brazil. According to the 2000 Brazilian Census, its population was 2066 inhabitants (1631 over the age of 10 years old). The present study is part of an observational, cross-sectional and population-based study conducted in 2 phases [13, 14]

Initially, community health workers from the Family Health Program (FHP) directly interviewed all inhabitants aged 10 years or older for headache symptoms in the previous year. The FHP works through family health-care teams which are composed of one physician, one nurse, one auxiliary nurse, and four to six community health workers, and are assigned to specific geographical areas with defined populations of 600–1000 families. Activities provided by family health-care teams take place at primary care facilities, in patients' homes, and in the community [15].

In the first phase of our study (screening phase), trained community health workers screened for the occurrence of headaches using the following question: "Have you had any headache episode over the last 12 months?" Those who screened positive were asked about headache frequency in the past month, and those reporting 15 days or more of headache were offered in-person assessment by neurologists with expertise in headache medicine. Three neurologists independently examined participants, and headaches were diagnosed according to the Second Edition of the International Classification of Headache Disorders (ICHD-2) [4]. Assessments were conducted from December 2005 to March 2006. Detailed methods have been previously described [13, 14].

Subsequently, all individuals with CM or pCM were assessed for psychiatric comorbidities. Psychiatric assessment was performed by an experienced psychiatrist using the Mini International Neuropsychiatric Interview (M.I.N.I.) [16] Diagnoses were based on the DSM-IV-TR [17].

The same investigators involved in the community-based assessment used the very same procedures to diagnose consecutive patients attended at a University-based headache center in the first half of 2006. This center is the only headache clinic in the state of Minas Gerais, Brazil. Once identified, CM and pCM patients were assessed for psychiatric comorbidities as described above.

The study followed the guidance of the regulatory norms of the Brazilian National Health Council (Resolution 196/1996) which is in accordance with the Helsinki Declaration. The protocol and all forms were reviewed and approved by the local ethics research committee.

Statistical Analysis

Demographics, clinical characteristics and comorbidities were compared between groups. Data were transferred to Epi-info 2000 by a study coordinator and analyzed using SPSS 12.0.

The relative frequencies of psychiatric comorbidities were stratified by headache type and confidence intervals were calculated. The significance level was established at the 5% level. Discrete data were compared between groups using the Chi-Squared test or the Fisher test (when anticipated values were small). For continuous non-parametric variables, the Mann-Whitney test was used.

Results

In the community, of 1,605 interviewed inhabitants, 57 (3.6%) had headaches on at least 15 days for at least three consecutive months. Of them, 43 had CM/pCM and 41 consented to being assessed by the psychiatrist (95.3% participation rate). In the headache center, 43 patients had CM/pCM and all consented in participating in the psychiatric assessment.

Sociodemographic profiles were similar between groups with the exception of the mean number of years of formal education, lower in the community relative to the headache center (Table 1).

Among individuals from the community, 65.9% of cases were diagnosed with any psychiatric disorder, relative to 83.7% in those from the headache center ($p = 0.06$). The relative frequencies of some specific diagnoses were remarkably high in both groups, despite not being significantly different. In the headache center, the most prevalent disorders were simple phobia (41.9%), generalized anxiety disorder (34.9%) and depression (32.6%). In the community, the same disorders were also the most common ones: generalized anxiety disorder (39.0%); phobias (29.3%); and depression (29.3%). Bipolar disorder was not seen in the community and was diagnosed in 2 cases from the headache center. Table 2 summarizes these data.

Discussion

To the best of our knowledge this is the first study to compare the frequency of psychiatric comorbidity of CM in community and tertiary care clinic samples. In contrast with our initial hypothesis, the frequency of psychiatric comorbidity in CM/pCM was similar in both settings, being considerably elevated in relation to the general population.

While psychiatric comorbidity in EM has been well established in the literature [8, 18], psychiatric disorders have been less studied in CM. Only a few studies have addressed psychiatric comorbidities of CM in population-based samples, finding increased levels of depression and anxiety disorders even in comparison with EM patients [10, 19]. One limitation of these studies was the use of self-report questionnaires rather than clinical interview in ascertaining psychiatric diagnosis. In the present study, we tried to overcome this using a validated structured clinical interview.

We found that up to a third of our patients in each setting had depression. A similar rate was described in the American Migraine Prevalence and Prevention (AMPP) study, a population-based survey based on mailed questionnaires [10]. In that study, depression was assessed by self-report of a physician diagnosis and by the Patient Health Questionnaire (PHQ-9) – depression module. One interesting result from the AMPP study was that CM patients were twice as likely to have depression as assessed by PHQ-9 in comparison with EM patients (respectively, 30.2% and 17.2%; OR (95% CI) = 2.0 (1.67 to 2.40), $p<0.001$). CM patients were also approximately twice as likely to report anxiety (CM 30.2% vs EM 18.8%; OR (95% CI) = 1.8 (1.51 to 2.15), $p<0.001$).

Regarding anxiety syndromes, generalized anxiety disorder and phobias seem to be comorbid with the migraine spectrum [18], and we found evidence of this association. Nonetheless, although evidence for this association has previously been considered to be robust [21, 22], recent publications challenge whether true comorbidity between these

conditions exist [12, 20]. Interestingly the frequency of obsessive-compulsive disorder was significantly high (between 20 and 25%) in CM/pCM patients in comparison with its prevalence in the general population and in medically ill patients. Only few previous studies have pointed out this association between obsessive-compulsive disorder and migraine that may be associated with underlying serotonin system dysfunction [23].

Bipolar disorder is also comorbid with migraine; migraineurs without aura are 2.4 times more likely to have bipolar disorder type 1, and the ratio increases to 7.3 when the diagnosis is migraine with aura [12, 20]. For bipolar disorder type 2, values are 2.5 and 5.2, respectively [21]. We failed to detect this association, likely because of power issues. Alcohol abuse has not been reported to be comorbid with migraine [12, 20, 24]. We also found no evidence of this association.

Demographic profiles were similar in both groups, and the vast majority of individuals with CM/pCM were women. This over-representation was expected due to the epidemiological profile of migraine. The comparable frequency of psychiatric comorbidities in both settings may suggest that the comorbidity of these conditions is determined mostly by shared biological predisposition, rather than by environmental influences [25].

It should be highlighted that the assessed community was from a small city, while the patients at the headache center mainly came from a large urban center. Nonetheless, studies of migraine that have enrolled subjects with different demographic features also found striking similarities regarding the risk of psychiatric comorbidities, once more pointing to shared biological factors as a plausible mechanism for the comorbidity [20, 22]. Specific genotypes coding D2 dopaminergic receptors, dysfunction in tyramine conjugation, changes in the metabolism of serotonin and catecholamines and in estrogen levels have been considered to explain the comorbidities [25-28].

Our study has several limitations and the most relevant is the relatively small sample size. It is worth mentioning, however, that we have comprehensively and systematically assessed almost all patients with CM/pCM from an entire population of a small city. We also did not assess the differential disability associated with headache and psychiatric disorders in the individuals. Finally, our findings are not adjusted for other factors known to be comorbid with CM, such as obesity, sleep disorders and low income. We partly justify these latter limitations by arguing that the demands on patients and resources in conducting these missing assessments could jeopardize the community assessment, since most interviews were conducted in participant households.

In conclusion, the present study suggests that the comorbidity of CM/pCM with psychiatric conditions seems not to differ in the community relative to the specialty care clinic in Brazil. Previous studies have not investigated whether the frequency of psychiatric disorders differs between these two settings and thus our finding should be confirmed by independent studies.

Conflict of interest:

The authors have no competing interests to declare.

Acknowledgments:

This work was partly funded by CNPq and Fapemig, Brazil.

Table 1: Demographic characteristics in individuals with chronic migraine or probable chronic migraine.

	Community (n=41)	**Headache Center (n=43)**	**p- value**
Gender			
Men	7 (17.1%)	2 (4.7%)	0.085**
Women	34 (82.9%)	41 (95.3%)	
Education			
Elementary or lower	26 (78.8%)	5 (11.6%)	**<0.001***
High School	5 (15.2%)	15 (34.9%)	
Some college	2 (6.1%)	23 (53.5%)	
Age			
Mean (SD)	41.2 (17.2)	35.7 (12.6)	0.197***
Range	13-73	18-63	

*Chi-squared ** Fisher *** Mann-Whitney

Table 2: Psychiatric comorbidities in individuals with chronic migraine or probable chronic migraine.

	Community (n=41)	Headache Center (n=43)	p- value
Any diagnose	36 (83.7%)	27 (65.9%)	0.059*
Somatization	7 (16.3%)	3 (7.3%)	0.314**
Eating disorders	2 (4.7%)	1 (2.5%)	0.999*
Dysthymia	9 (20.9%)	9 (22.0%)	0.999**
Phobia	18 (41.9%)	12 (29.3%)	0.229*
Depression	14 (32.6%)	12 (29.3%)	0.744*
Obsessive compulsive disorder	9 (20.9%)	10 (24.4%)	0.705*
Generalized anxiety disorder	15 (34.9%)	16 (39.0%)	0.694*
Alcohol abuse	0 (0.0%)	2 (4.9%)	0.235**

*Chi-squared ** Fisher

References

1. Tepper SJ, Dahlöf CG, Dowson A, Newman L, Mansbach H, Jones M, *et al*. Prevalence and diagnosis of migraine in patients consulting their physician with a complaint of headache: data from the Landmark Study. Headache 2004; 44(9):856-64.
2. Rasmussen BK. Epidemiology of headache. Cephalalgia. 2001; 21(7):774-7.
3. Lipton RB, Bigal ME. Migraine: epidemiology, impact, and risk factors for progression. Headache 2005; 45(Suppl 1):S3-S13.
4. Headache Classification Subcomitte of the International Headache Society. The Internacional Classification of Headache Disorders. 2nd Edition. Cephalalgia 2004; 24:1-160.
5. Diener HC, Dodick DW, Aurora SK, Turkel CC, DeGryse RE, Lipton RB, Silberstein SD, Brin MF; PREEMPT 2 Chronic Migraine Study Group.OnabotulinumtoxinA for treatment of chronic migraine: results from the double-blind, randomized, placebo-controlled phase of the PREEMPT 2 trial. Cephalalgia. 2010; 30(7): 804-14.
6. Bigal ME, Lipton RB. Obesity is a risk factor for transformed migraine but not chronic tension-type headache. Neurology. 2006; 67(2): 252-257.
7. Rains JC. Chronic headache and potentially modifiable risk factors: screening and behavioral management of sleep disorders. Headache. 2008; 48(1): 32-39.
8. Radat F, Swendsen J. Psychiatric Comorbidity in migraine: a review. Cephalalgia 2005; 25:165-178.

9. Bigal ME, Serrano D, Buse D, Scher A, Stewart WF, Lipton RB. Acute migraine medications and evolution from episodic to chronic migraine: a longitudinal population-based study. Headache. 2008; 48(8): 1157-1168.
10. Buse DC, Manack A, Serrano D, Turkel C, Lipton RB. Sociodemographic and comorbidity profiles of chronic migraine and episodic migraine sufferers. J Neurol Neurosurg Psychiatry. 2010; 81(4): 428-32.
11. Buse D, Manack A, Serrano D, Reed M, Varon S, Turkel C, Lipton R. Headache impact of chronic and episodic migraine: results from the American Migraine Prevalence and Prevention Study. Headache. 2011 [Epub ahead of print] PMID: 22106869.
12. Jette N, Patten S, Williams J, Becker W, Wiebe S. Comorbidity of migraine and psychiatric disorders: a national population-based study. Headache. 2008; 48(4): 501-516.
13. Silva Jr AA, Krymchantowski A, Moreira P, Vasconcelos L, Gomez RS, Teixeira AL. Prevalence of headache in the entire population of small city in Brazil. Headache 2009; 49: 895-9.
14. Silva Jr AA, Costa EC, Gomes JB, Leite FM, Gomez RS, Vasconcelos LP, Krymchantowski A, Moreira P, Teixeira AL. Chronic headache and comorbibities: a two-phase, population-based, cross-sectional study. Headache. 2010; 50(8): 1306-12.
15. Paim J, Travassos C, Almeida C, Bahia L, Macinko J. The Brazilian health system: history, advances, and challenges. Lancet. 2011; 377(9779): 1778-1197.

16. Amorim P. Mini International Neuropsychiatric Interview (M.I.N.I): validação de entrevista breve para diagnóstico de transtornos mentais. Rev Bras Psiquiatr 2000; 22: 106–115.
17. American Psychiatry Association. Desk reference to the diagnostic criteria from DSM-IV-TR: American Psychiatric Association, 2000.
18. Antonaci F, Nappi G, Galli F, Manzoni GC, Calabresi P, Costa A. Migraine and psychiatric comorbidity: a review of clinical findings. J Headache Pain. 2011; 12(2): 115-25.
19. Zwart JA, Dyb G, Hagen K, Ødegård KJ, Dahl AA, Bovim G, Stovner LJ. Depression and anxiety disorders associated with headache frequency. The Nord-Trøndelag Health Study. Eur J Neurol. 2003; 10(2): 147-52.
20. Breslau N, Lipton RB, Stewart WF, Schultz LR, Welch KMA. Comorbidity of migraine and depression: Investigating potential etiology and prognosis. Neurology 2003; 60:1308-1312.
21. Ratcliffe GE, Enns MW, Jacobi F, Belik SL, Sareen J. The relationship between migraine and mental disorders in a population-based sample. Gen Hosp Psychiatry 2009; 31: 14–19.
22. Evans RW, Rosen N. Migraine, psychiatric comorbidities, and treatment. Headache 2008; 48:952-958.
23. Vasconcelos LP, Silva MC, Costa EA, da Silva Júnior AA, Gómez RS, Teixeira AL. Obsessive compulsive disorder and migraine: case report, diagnosis and therapeutic approach. J Headache Pain. 2008; 9(6): 397-400.
24. Merikangas KR, Angst J, Isler H. Migraine and psychopathology: Results of the Zurich Cohort Study of Young Adults. Arch Gen Psychiatry 1990; 47: 849-853.

25. Peterlin BL, Katsnelson MJ, Calhoun AH. The associations between migraine, unipolar psychiatric comorbidities, and stress-related disorders and the role of estrogen. Curr Pain Headache Rep 2009; 13(5):404–412.
26. Peroutka SJ, Price SC, Wilhoit TL, Jones KW. Comorbid migraine with aura, anxiety, and depression is associated with dopamine D2 receptor (DRD2) NcoI alleles. Mol Med 1998; 4:14–21
27. Jarman J, Fernandez M, Davies PT *et* al. High incidence of endogenous depression in migraine: confirmation by tyramine test. J Neurol Neurosurg Psychiatry 1990; 53: 573–575.
28. Montagna P. Migraine genetics. Expert Rev Neurother 2008; 8(9):1321–1330

Article

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Relative frequency of headache types

A longitudinal study in the tertiary care

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ABSTRACT

In order to properly assess patients with primary headache, one needs to follow the cases up longitudinally. In Brazil, there were no studies using this methodology published after the publication of the latest issue of the International Classification of Headaches in 2004 – ICHD-2. This is especially important when we consider that it was only after such publication that we had the criteria used to classify some types of headaches which evolve with daily, or almost daily, spells, and which are very common in tertiary health care centers. **Objective:** To assess the frequency of headache types in a tertiary health care center, in a longitudinal fashion. **Method:** We assessed 95 consecutive patients. These patients were diagnosed and classified according to the ICDH-2. The subjects were followed up for 18 months, they were treated and reassessed. **Results:** Most of the individuals had more than one type of headache. Among those with episodic migraine in 2007, 6 developed chronic migraine in 2008, producing an incidence rate of 7.2%. Among those with chronic migraine in 2007, 9 remitted, producing a remission rate of 75%. In 2007, 24 individuals abused analgesic agents and 17 no longer showed abuse criteria in 2008 – when 7 new cases were found. **Conclusion:** The diagnosis of migraine remained stable. On the other hand, treatment brought about a reduction in the frequency of headaches caused by excessive use of analgesic, although the frequency of daily chronic headache was almost unaltered.

Key words: headache, migraine, diagnosis.

Avaliação longitudinal da frequência dos tipos de cefaléia em um centro terciário

RESUMO

Em casos de cefaléia primária é fundamental o acompanhamento longitudinal do paciente. No Brasil não há estudos que utilizaram essa metodologia após a publicação da Classificação Internacional de Cefaléias em 2004 (ICDH-2). Isso é especialmente importante quando consideramos que, apenas após tal publicação, obtivemos critérios para classificar cefaléias diárias, ou quase diárias, tão comuns em centros terciários. **Objetivo:** Avaliar longitudinalmente a frequência dos tipos de cefaléia em um centro de cefaléias. **Método:** Foram avaliados 95 pacientes consecutivos. Estes pacientes foram diagnosticados e classificados conforme a ICDH-2. Os indivíduos foram acompanhados por 18 meses, tratados e reavaliados. **Resultados:** A maioria dos indivíduos recebeu mais de um diagnóstico. Entre aqueles com migrânea episódica em 2007, 6 desenvolveram migrânea crônica em 2008, com 7,2% de incidência; entre aqueles com migrânea crônica em 2007, 9 remitiram, sendo a taxa de remissão de 75%. Em 2007, o abuso de analgésicos foi encontrado em 24 indivíduos. Desses, 17 não apresentavam mais critérios de abuso em 2008, enquanto 7 novos casos foram encontrados. **Conclusão:** Houve estabilidade diagnóstica da migrânea. Por outro lado, a intervenção terapêutica permitiu a redução da frequência dos casos de cefaléia por uso excessivo de analgésicos, embora a frequência de cefaléia crônica diária mostrou-se praticamente inalterada.

Palavras-chave: cefaléia, migrânea, diagnóstico.

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Headaches affect over 50% of the adults from the general population. In this setting, tension-type headache (TTH) is the most common headache type, followed by migraine[1,2]. In the tertiary care, however, migraine and chronic daily headaches (CDH), are far more common than TTH[3-8]. CDHs do not represent a distinct nosologic entity, as per the second edition of the International Classification of Headache Disorders (ICDH-II)[9]. Indeed, CDHs describe primary or secondary headache happening on 15 or more days per month, for at least 3 months, lasting at least 4 hours per day[10].

Most studies conducted in the tertiary care are retrospective or cross-sectional[3-7]. Few studies followed the patients longitudinally, using the ICDH-II to diagnose the headaches. This is of particular importance for the CDHs, since diagnosis requires following the patients for at least 3 months. Furthermore, because CDHs evolve from episodic headaches, longitudinal studies are of importance in order to better understand the natural history of the primary episodic headaches. Finally, the clinical phenotype of the CDHs often incorporates aspects of migraine and of TTH, making differential diagnosis of CDH subtypes sometimes difficult.

Accordingly, the aim of this study was to longitudinally follow individuals with primary headache diagnoses seen at a university-based clinic, in order to classify their headaches at different years.

METHOD

This study was conducted from June of 2007 to December of 2008. Sample consists of 95 patients consecutively seen.

At the first interview, participants responded to a semi-structure interview where demographic characteristics as well as the phenotype of the headaches were collected.

Patients were then diagnosed and headaches were classified according to the ICDH-II criteria. CDHs were divided in chronic migraine (CM), probable CM, chronic TTH (CTTH), probable CTTH, chronic paroxysmal hemicrania (CPH), new daily persistent headache, chronic post-craniotomy headache, and medication overuse headache.

After the first interview, individuals with CDHs were submitted to an extensive therapeutic protocol. The protocol included starting preventive medications, detoxification of offending medications when adequate, proper acute treatment, and non-pharmacological therapies.

Patients were then followed for 18 months and reassessed. Different than in the first assessment (when only the ICDH-2 diagnosis was rendered), in addition of being rediagnosed, all types of headaches presented by the participants were classified in the second assessment.

Date was entering and analyzed using software EpiInfo®. The frequency of the headaches at the two assessments was compared.

RESULTS

Mean age of participants was 42.0 years, and 90.5% of them were women.

Migraine without aura was the most common diagnosis both in 2007 and 2008. In 2007, the second most common diagnosis was migraine with typical aura (29.5%); in 2008, it was idiopathic stabbing headache (ISH), 36.8%.

Most individuals had more than one diagnosis both in the first and in the second assessments. In 2007, 47.3% of the participants had more than one diagnosis; in 2008, 60.0% of them had it. In 2007 a total of 147 diagnoses were rendered; in 2008, the number of diagnoses were 177. Established diagnoses are displayed in Table 1.

In the sample, 87.3% had any migraine subtype in 2007, for a total of 83 individuals, and 86.7% (n=82) in 2008. In 2007, 69 subjects had episodic migraine, and 11 had ISH. Other 12 individuals with migraine had chronic migraine, and one had ISH. Also, 2 individuals were diagnosed with probable episodic migraine.

Among individuals with episodic migraine in 2007, 5 developed chronic migraines in 2008, for an incidence of 7.2%; of those with chronic migraine in 2007, 9 remitted to episodic migraine in 2008, for a remission rate of 75%. Accordingly, considering incident and remitted cases, in 2008, 72 patients had episodic migraine and 7 had chronic migraine. Among them, 36 also had IHS.

CDH was diagnosed in 46.3% of the patients in 2007, and 38.9% of the patients in 2008, although one patient in 2007 was diagnosed with two types of CDH and in 2008 four patients.

In 2007, medication overuse headache was diagnosed in 24 individuals. Of them, 17 did not fill criteria for medication overuse headache in 2008, while 7 new cases were diagnosed, for a total of 14 cases in 2008. All cases of medication overuse headache happened in individuals with some migraine type.

Diagnostic subtypes of the CDHs are displayed in Table 2.

DISCUSSION

The frequency of migraine remained stable over the 18 months of follow-up. Around 87% of the patients had some form of migraine both in the first and second assessments. Other studies conducted at the tertiary care found that the prevalence of migraine at this setting ranges from 33 to 80%[3-6,8]. A past study conducted in our clinic diagnosed migraine in 79.2% of the patients[3].

ISH was diagnosed in only 12.6% of the cases in the first assessment, when spontaneous report was used. However, in the second assessment, when diagnoses were

Table 1. Established diagnosis as per for the Second Edition of the International Classification of Headache Disorders.

	2007		2008	
Diagnosis	**N**	**%**	**N**	**%**
Migraine without aura	41	43.2	43	45.3
Migraine with typical aura	28	29.5	29	30.5
Chronic migraine	12	12.6	7	7.4
Probable migraine without aura	2	2.1	1	1.1
Probable chronic migraine	–	–	2	2.1
Infrequent episodic tension type headache	–	–	3	3.2
Frequent episodic tension type headache	7	7.4	11	11.6
Chronic tension type headache	5	5.3	12	12.6
Probable frequent episodic tension type headache	1	1.1	1	1.1
Probable chronic tensional type headache	1	1.1	3	3.2
Episodic paroxysmal hemicrania	–	–	1	1.1
Chronic paroxysmal hemicrania	2	2.1	2	2.1
Idiopathic stabbing headaches	12	12.6	35	36.8
Headaches attributed to exercises	1	1.1	1	1.1
New daily persistent headache	–	–	1	1.1
Chronic post-craniotomy headaches	1	1.1	–	–
Temporal arteritis	1	1.1	1	1.1
Headaches due to Idiopathic Intracranial Hypertension	3	3.2	3	3.2
Medication overuse headache	24	25.3	14	14.7
Other disorders of head and face	2	2.1	3	3.2
Trigeminal neuralgia	2	2.1	2	2.1
Not classifiable	2	2.1	2	2.1

Table 2. Number of cases and relative frequency of the chronic daily headaches subtypes.

	2007		2008	
Diagnoses	**N**	**%**	**N**	**%**
Chronic migraine	12	26.7	7	17
Probable chronic migraine	0	0	2	4.8
Chronic tension type headache	5	11.1	12	29.6
Probable chronic tension type headache	1	2.2	3	7.3
Chronic paroxysmal hemicrania	2	4.5	2	4.8
New daily persistent headache	0	0	1	2.4
Chronic post-craniotomy headaches	1	2.2	0	0
Medication overuse headache	24	53.3	14	34.1
Total	45	100	41	100

formally established, relative frequency was 36.8%. In patients with migraine, ISH happened in 42.6% of them. Piovesan and cols., following a population of 233 individuals with migraine, found a prevalence of 40.4%[11]. Raskin, found that 42% of the individuals with migraine, and only 3% of those without migraine, had ISH[12]. These findings support our results.

CDH was similar to what has been reported in a prior study[3]. In studies from Europe, prevalence of CDH ranged from 27% to 60% at the tertiary care[5-7]. The diagnosis frequency had changed significantly among the CDH between the two assessments, although the absolute number remain relatively stable – n=45 in 2007 and n=41 in 2007. It is worth mentioning that the relative frequency

of medication overuse headache decreased significantly, from 25.3% in 2007 to 14.7% in 2008. For this CDH subtype the therapeutic protocol, which included detoxifying patients excessively using medication, was effective.

This is the first Brazilian study conducted in the tertiary care which follows patients longitudinally, applying the ICDH-II. For CDH, assessing all headache types and following patients longitudinally are of particular relevance. In cross-sectional studies it is difficult to assess all types of headache in a single patient, since these studies are often conducted with questionnaires. Furthermore, the quality of information is sometimes compromised when only one assessment is conducted. Because CDH lack biological markers, applying the ICDH-II with the support of headache diaries is necessary for formally assigning a diagnosis.

These difficulties are exemplified by medication overuse headache, which require detoxification for a definitive diagnosis. This can only be done prospectively, and after establishment of therapeutic interventions. Accordingly, we decided to only diagnose the most important headaches that patients had in 2007, to implement therapeutics, and then to diagnose all subtypes headaches.

The relative frequency of migraine diagnoses remains stable over time. Therapeutics interventions are associated with decreased frequency of medication overuse headache. The relevant frequency of the CDHs remained almost untouched, suggesting that despite of all efforts, the therapeutic management of CDHs continues to be challenging.

REFERENCES

1. Stovner LJ, Hagen K, Jensen R, et al. The global burden of headache: a documentation of headache prevalence and disability worldwide. Cephalalgia 2007;27:193-210.
2. Queiroz LP, Peres MFP, Kowacs F, et al. Chronic daily headache in Brazil: a nationwide population-based study. Cephalalgia 2008;28:1264-1269.
3. Vasconcelos LPB, Stancioli FG, Leal JC, et al. Cefaléias em serviço especializado. Migrâneas & Cefaléias 2006;9:4-7.
4. Felício AC, Bichuetti DB, Santos WA, Godeiro Junior CO, Marin LF, Carvalho DS. Epidemiology of primary and secondary headaches in a Brazilian tertiary-care center. Arq Neuropsiquiatr 2006;64:41-46.
5. Dowson AJ. Analysis of the patients attending a specialist UK headache clinic over a 3-year period. Headache 2003;43:14-18.
6. Gantenbein AR, Kozak S, Agosti F, Agosti R, Isler H. Headache patients in primary care and a tertiary care unit in Zürich, Switzerland. Cephalalgia 2006,26: 1451-1457.
7. Vinding GR, Zeeberg P, Lyngberg A, Nielsen RT, Jensen R. The burden of headache in a patient population from a specialized headache center. Cephalalgia 2007;27:263-270.
8. Scalas C, Calistri L. Chronic daily headache in a paediatric headache centre. J Headache Pain. 2005 Sep;6:274-276.
9. Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 2nd Edition. Cephalalgia 2004;24(Suppl 1):S9-S160.
10. Silberstein SD, Lipton RB. Chronic daily headache. Curr Opin Neurol 2000; 13:277-283.
11. Piovesan EJ, Kowacs PA, Lange MC, Pacheco C, Piovesan LR, Werneck LC. Prevalence and semiologic aspects of the idiopathic stabbing headache in a migraine population. Arq Neuropsiquiatr 2001;59:201-205.
12. Raskin NH, Schwartz RK. Icepick-like pain. Neurology 1980;30:203-205.

Artigo 10

Temporo-Mandibular Disorders and Primary Headaches in the Orofacial Pain Clinic and a headache tertiary center.

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Abstract

Background: Specific primary headache syndromes, in special migraine, and temporo-mandibular disorders (TMD) are comorbid. Nonetheless, most of the studies diagnosed the diseases based on self-reported symptoms or on questionnaires.

Objectives: To investigate the relationship between TMD and headache syndromes by conducting rigorous face to face assessments in patients from an orofacial pain clinic and a headache tertiary center.

Methods: Sample consists of 289 individuals consecutively identified at a headache center and 78 individuals seen in an oral clinic because of symptoms suggestive of TMD (TMD). Headaches were diagnosed according to the Second Edition of the International Classification of Headache Disorders (ICHD-2) (19) after a structured interview and clinical examination. TMD was diagnosed as per the Research diagnostic criteria for temporomandibular disorders (RDC).

Results: Migraine was diagnosed in 79.8% of headache sufferers and 25.6% of those with TMDs ($p<0.001$). TTH happened in 20.4% and 46.1% respectively ($p<0.001$). Among TMD sufferers, painful muscular dysfunction happened in 49.5% of those with headache vs. 23.1% in those form the TMDs group ($p<0.001$). Articular TMD was rarely observed among those from the headache group (1.4%) but happened in 15.4% in those from the TMDs group ($p<0.001$). Coexisting muscular and articular TMD happened in 59.0% of the TMDs patients.TMD with myofascial pain happened in 48.1% of headache sufferers and 70.5% of those with TMDs ($p<0.001$).

Conclusions: We found strong evidence of comorbidity between both disorders and we confirmed previous findings about the specificity of TMD pain and of TMD with muscular symptoms in the comorbidity.

Introduction

Headache is a frequent cause of medial consultation at all levels of care. In the general population, headaches affect nearly 50% of the subjects (1). In Brazil, migraine affects around 10% of the adults, while tension-type headache (TTH) happens in other 38% (1). In a face-to-face study in which the entire population of a city in Brazil was investigated, one-year prevalence of headache was 65.4% (2), and distribution of headache types were in alignment with other studies from Brazil (3,4). Headaches are a frequent cause of consultation in the specialty care (5).

Temporomandibular Disorders (TMD) is a collective term which embraces a number of clinical problems that involve the masticatory muscles, the temporomandibular joint and the associated structures (6). Although the prevalence of TMD varies widely, in the Brazilian general population over 40% of subjects have at least one TMD symptom, and 10% have three or more (7). TMJ pain affects from 5-16% of the general population and, as for migraine headaches, women are disproportionally affected (7-9).

Specific primary headache syndromes, in special migraine, and TMD are comorbid, as demonstrated by clinic-based and population studies. Additionally, TMD is a risk factor for increased headache frequency (9-18).Nonetheless, as with many of the identified risk factors for increased migraine frequency, most of the studies diagnosed both migraine and TMD based on self-reported symptoms or on questionnaires. Accordingly, the aim of this study was to investigate the relationship between TMD and headache syndromes by conducting rigorous face to face assessments in patients from an orofacial pain clinic and a headache tertiary center.

Methods

Participants of this study consist of 289 individuals consecutively identified at the Headache Specialty Center at Universidade Federal de Minas Gerais (Belo Horizonte, Brazil), as well as 78 individuals who sought care with complaints suggestive of TMD at the Odontologic Training and Specializing Center (Belo Horizonte, Brazil). All patients were independently assessed by neurologists with experience in headache medicine. Headaches were diagnosed according to the Second Edition of the International Classification of Headache Disorders (ICHD-2) (19) after a structured interview and clinical examination. Headaches of interest included migraine, TTH, chronic daily headache (CDH), and medication overuse headache, which was diagnosed only after detoxification, as per the ICHD-2

Oral and muscular assessments were respectively conducted by dentists and physical therapists. Trigger points, threshold for pain and the temporomandibular joint were rigorously assessed. TMD was assessed using the Research diagnostic criteria for temporomandibular disorders (RDC) (6) through an interview and, subsequently, a physical examination. The RDC/TMD consists of a dual-axis approach (Axis I and II), composed by a questionnaire and a physical exam. Additionally, the head and neck muscles were examined and pain sensitivity to 2.0 kg straight pressure was assessed using a Likert pain scale. Examiners were blinded to each other diagnoses.

Data were summarized using summary tables and descriptive statistics. Non-parametric data between groups were compared using the Chi-Squared test or the Fischer test (when anticipated values were small). For continuous variables, the Mann-Whitney test was used. Gaussian variables were contrasted using the T-test.

Protocol and all forms were reviewed and approved by the Investigation Review Board of the Federal University of Minas Gerais, Brazil.

Results

Among individuals with headache (n = 289), mean age was 42.7 years, while in individuals with TMD symptoms (TMDs), it was 37.1 years. Women represented 86.9% of headache sufferers and 75.6% in the TMDs group (p=0.015). Most participants had less than 8 years of formal education. Demographic data are presented in Table 1.

Migraine was diagnosed in 79.8% of headache sufferers and 25.6% of those with TMDs (p<0.001). TTH happened in 20.4% and 46.1% respectively (p<0.001). CDH with medication overuse was the diagnosed in16.6% of headache sufferers and 3.8% of TMD sufferers (p=0.004) (Table 2).

TMD happened in 67.1% of those with headache and 97.4% of those with TMDs. Among the TMD sufferers, painful muscular dysfunction happened in 49.5% of those with headache vs. 23.1% in those form the TMDs group (p<0.001). Articular TMD was rarely observed among those from the headache group (1.4%) but happened in 15.4% in those from the TMDs group (p<0.001). Coexisting muscular and articular TMD happened in 59.0% of the TMDs patients (Table 3). TMD with myofascial pain happened in 48.1% of headache sufferers and 70.5% of those with TMDs (p<0.001). Local muscle soreness was more common in the headache sufferers than in those with TMDs (p=0.047) (Table 4).

Discussion

Headache and TMD are two painful disorders that are comorbid and may sometimes be disabled, requiring specialized treatment. Better characterization of the comorbidity is necessary as a prelude to customized treatment. Our study adds to the field by formally assessing patients from two specialty clinics using gold-standard diagnostic criteria.

As reported by others, women were more commonly affected by both disorders, specially at young adulthood and middle-age (1-12), and it seems that the female predominance is amplified at the specialty care, relative to community studies (2,5,18,20). Since migraine and TMD have different physiopathology, we did not expect to find identical gender ratio in both groups. Nonetheless, part of this difference may be justified by the fact that when TMD and migraine co-occur, migraine tends to be more severe than when they do not, which would channel women with more severe TMD to the headache center rather to the TMD center (9). Furthermore, it is well established that women are more likely than men to suffer pain episodes as a function of neuroendocrine events and of the reproductive stage (9,21-23). Menstrual migraine is well known to be more severe and refractory to treatment than non-menstrual migraine (9,21), and a limitation of our study was not to characterize this migraine subgroup, since this would require longitudinal follow-up and use of dairies.

We found strong association between migraine and TMD pain, as previously described (9-18). Gonçalves *et al.*, in a population-based study, found that TMD symptoms are more likely to occur among those who present any headache type. When three or more TMD symptoms were present, headache occurred in 72.8% versus 37.9% of those who did not present any TMD symptoms (11), as confirmed by others (13). Furthermore, when assessing a clinic-based sample, they found that the comorbidity of TMD with migraine,

CDH, and TTH, happened only for the muscular form, and not for the articular type (16). They also found that severity of TMD correlated with increased headache frequency (13, 16). Our data strongly support their findings and this is of importance, since Bevilaqua-Grossi et al. reported that TMD with myofascial pain is strongly associated to increased headache frequency (26).

Of interest is the fact that we found more TTH sufferers in the TMD clinic than in the headache center. TTH is the most prevalent of the primary headaches in the general population, with prevalences ranging from 38-78% (1,25). In a telephone-based interview conducted in Brazil, prevalence was 13%, while probable TTH happened in other 22.6%. Thus, further studies should focus on the relationship between TMD and TTH. In another clinic-based study, findings were similar to ours (27).

Finally, we also found evidence that CDH and TMD are comorbid, as suggested by others, where painful TMD was strongly associated with specific CDH types (11, 12, 16, 18, 26, 28).

This study has several limitations, in addition to the lack of controlling for menstrual cycle. First, both groups come from specialty care, without a contemporary control from the population. Second, psychiatric comorbidities were not assessed and this is of importance, since they may be related to both headaches and TMD. Finally, patients were not matched by age and gender (since they were consecutively enrolled).

We conducted a study independently identifying patients from two specialty centers, one in headache and one in TMD. We found strong evidence of comorbidity between both disorders and we confirmed previous findings about the specificity of TMD pain and of TMD with muscular symptoms in the comorbidity. We also found evidence of an increased cluster of TTH sufferers in the TMD clinic, and this finding must be further elucidated.

Table 1. Demographic data at the two specialty centers

	Headache Center (n=289)	**Oral Clinic (n=78)**	**p-value**
Sex			
Women	86.9% (251)	75.6% (59)	**0.015****
Men	13.1% (38)	24.4% (19)	
Years of school			
< 8 years	52.3% (136)	23.2% (16)	**<0.001***
8-15 years	35.0% (91)	59.4% (41)	
> 15 years	12.7% (33)	17.4% (12)	

(*) Pearson's Chi-square Test; (**) Mann-Whitney Test;

Table 2. Headache types and frequency as a function of place of enrollment.

	Headache Center (n=289)		Oral Clinic (n=78)		p-value
	%	**CI 95%**	**%**	**CI 95%**	
Migraine	79.89%	[74.16; 83.63]	25.64%	[15.73; 35.55]	**<0.001***
Tension-type Headache	20.42%	[15.74; 25.09]	46.15%	[34.84; 57.47]	**<0.001***
Chronic Daily Headache	16.61%	[12.29; 20.93]	3.85%	[0.52; 8.21]	**0.004***

CI: confidence interval; (*) Pearson's Chi-square Test;

Table 3. Temporo-mandibular diagnosis as a function of place of enrollment

	Headache Center (n=289)	**Oral Clinic (n=78)**	**p-value**
No TDM	32.9% (95)	2.6% (2)	**<0.001***
Muscular	49.5% (143)	23.1% (18)	
Articular	1.4% (4)	15.4% (12)	
Muscular and articular	16.3% (47)	59.0% (46)	

TDM: Temporomandibular Disorders; (*) Pearson's Chi-square test;

Table 4. Temporomandibular disorder types as function of place of enrollment.

	Headache Center		**Oral Clinic**		**p-value**
	Prevalence	**CI 95%**	**Prevalence**	**CI 95%**	
Disc dislocation with reduction	3,46%	[1,34; 5,58]	28,21%	[17,99; 38,42]	**<0.001***
Disc dislocation without reduction	0,35%	[0,34; 1,03]	10,26%	[3,37; 17,14]	**<0.001***
Spontaneous dislocation	0,69%	[0,27; 1,65]	7,69%	[1,65; 13,74]	**0.002****
Synovitis/ capsulitis	17,65%	[9,24; 26,06]	42,31%	[31,10; 53,52]	**<0.001***
Myofascial pain	48,10%	[42,30; 53,89]	70,51%	[60,17; 80,86]	**<0.001***
Local muscle soreness	18,34%	[13,85; 22,83]	8,97%	[2,49; 15,46]	**0.047***
Myospasm	0%	-	8,97%	[2,49; 15,46]	**<0.001****

(*) Pearson's Chi-square test; (**) Fisher's exact test

References

1- Stovner LJ, Hagen K, Jensen R, Katsarava Z, Lipton RB, Scher AI, et al. The global burden of headache: a documentation of headache prevalence and disability worldwide. Cephalalgia, 2007;27, 193–210.

2- Silva-Júnior AA, Krymchantowski A, Moreira P, Vasconcelos L, Gomez RS, Teixeira AL. Prevalence of Headache in the Entire Population of a Small City in Brazil. Headache 2009;49:895-899.

3- Queiroz LP, Barea LM, Blank N. An epidemiological study of headache in Florianopolis, Brazil. Cephalalgia, 2005, 26, 122–127.

4- Pahim LS, Menezes AMB, Lima R. Prevalence and factors associated to migraine in adult population, Southern Brazil. Rev Saúde Pública 2006;40(4):692-8.

5- Silva-Júnior AA, Faleiros BE, Santos TM, Gómez RS, Teixeira AL. Relative frequency of headache types: a longitudinal study in the tertiary care. Arq Neuropsiquiatr 2010;68(6).

6- Dworkin SF, Sherman J, Mancl L, Ohrbach R, LeResche L, Truelove E. Reliability, validity, and clinical utility of the research diagnostic criteria for Temporomandibular Disorders Axis II Scales: depression, non-specific physical symptoms, and graded chronic pain. J Orofac Pain 2002;16(3):207-220.

7- Gonçalves AGG, Fabbro ALD, Campos JADB, Bigal ME, Speciali JG. Symptoms of temporomandibular disorders in the population: an epidemiological study. J Orofac Pain 2010;24(3):270-8.

8- Mobilio N, Casetta I, Cesnik E, Catapano S. Prevalence of self-reported symptoms related to temporomandibular disorders in an Italian population. J Oral Rehab 2011.

9- Plesh O, Adams SH, Gansky SA. Temporomandibular Joint and Muscle Disorder-type Pain and Comorbid Pains in a National US Sample. J Orofac Pain 2011;25(3):190-198.

10- Silva-Junior AA, Costa EC, Gomes JB, Leite FM, Gomez RS, Vasconcelos LP, Krymchantowski A, Moreira P, Teixeira AL. Chronic Headache and Comorbidities: a Two-Phase, Population-Based, Cross-Sectional Study. Headache 2010;50:1306-12.

11- Gonçalves DAG, Bigal ME, Jales LCF, Camparis CM, Speciali JG. Headache and Symptoms of Temporomandibular Disorder: An Epidemiological Study. Headache 2010;50:231-41.

12- Gonçalves DAGm Speciali JG, Jales LCF, Camparis CM, Bigal ME. Temporomandibular symptoms, migraine and chronic daily headaches in the population. Neurology 2009;73:645-6.

13- Ballegaard V, Thede-Schmidt-Hansen P, Svensson P, Jensen R. Are headache and temporomandibular disorders related? A blinded study. Cephalalgia 2008;28:832-41.

14- Fragoso YD, Alves HHC, Garcia SO, Finkelsztejn A. Prevalence of parafunctional habits and temporomandibular dysfunction symptoms in patients attending a tertiary headache clinic. Arq Neuropsiquiatr 2010;68(3):377-80.

15- Kang JK, Ryu JW, Choi JH, Merrill RL, Kim ST. Application of ICDH-II criteria for headaches in a TMJ and orofacial pain clinic. Cephalalgia 2009;30(1):37-41.

16- Gonçalves DAG, Camparis CM, Speciali JG, Franco AL, Castanharo SM, Bigal ME. Temporomandibular Disorders are Differentially Associated with Headache Diagnoses: A Controlled Study. Clin J Pain 2011.

17- Özkan NÇ, Özkan F. The relationship of temporomandibular disorders with headaches: a retrospective analysis. Agri 2011;23(1):13-17.

18- Franco AL, Gonçalves DAG, Castanharo SM, Speciali JG, Bigal ME, Camparis CM. Migraine is the Most Prevalent Primary Headache in Individuals with Temporomandibular Disorders. J Orofac Pain 2010;24:287-92.

19- Headache Classification Committee. The international classification of headache disorders, cranial neuralgia and facial pain. Cephalalgia 2004;2(Suppl 1):S1-S160.

20- Felício AC, Bichuetti DB, Santos WA, Godeiro Junior CO, Marin LF, Carvalho DS. Epidemiology of primary and secondary headaches in a Brazilian tertiary-care center. Arq Neuropsiquiatr 2006;64:41-46.

21- Nappi RE, Berga SL. Migraine and reproductive life. Handbook of Clinical Neurology 2010;97:303-22.

22- Liverman CS, Brown JW, Sandhir R, McCarson KE, Berman NE. Role of the oestrogen receptors GPR30 and ERalpha in peripheral sensitization: relevance to trigeminal pain disorders in women. Cephalalgia. 2009 Jul;29(7):729-41.

23- Gupta S, McCarson KE, Welch KM, Berman NE. Mechanisms of pain modulation by sex hormones in migraine. Headache. 2011 Jun;51(6):905-22.

24- Crystal SC, Robbins MS. Epidemiology of Tension-type Headache. Curr Pain Headache Rep 2010;14:449-54.

25- Queiroz LP, Peres MF, Piovesan EJ, Kowacs F, Ciciarelli MC, Souza JA, Zukerman E. A nationwide population-based study of tension-type headache in Brazil. Headache. 2009 Jan;49(1):71-8.

26- Bevilaqua-Grossi D, Lipton RB, Napchan U, Grosberg B, Ashina S, Bigal ME. Temporomandibular disorders and cutaneous allodynia are associated in individuals with migraine. Cephalalgia. 2010 Apr;30(4):425-32.

27- Koenig MA, Gladstein J, McCarter RJ, Hershey AD, Wasiewski W; Pediatric Committee of the American Headache Society. Chronic daily headache in children and adolescents presenting to tertiary headache clinics.

28- Stuginski-Barbosa J, Macedo HR, Bigal ME, Speciali JG. Signs of temporomandibular disorders in migraine patients: a prospective, controlled study. Clin J Pain. 2010 Jun;26(5):418-21.