

Objectives: To assess the background incidence of viscerotropic-like and neurotropic-like diseases in Mexico, Brazil and Malaysia before CYD-TDV introduction to ultimately facilitate the interpretation of any potential safety signal after larger-scale vaccine implementation.

Methods: In each country, several hospitals performed a retrospective chart review over a one-year period of confirmed or suspected cases of Guillain-Barré syndrome (GBS), Fisher syndrome, Aseptic Meningitis, Encephalitis, acute disseminated encephalomyelitis, and multiorgan failure with no confirmed cause. Brighton Collaboration (BC) criteria were used to evaluate the diagnosis certainty of neurotropic-like conditions. Denominators were obtained by combining different sources of data on the health care system, the population living in the catchment area of the study hospitals (census data), and other neighbor hospitals.

Results: Based on preliminary results from Brazil and Mexico, the estimated incidence rates of neurotropic-like disease (level 1 of BC) were 1.44 (95% CI: 0.96–2.07) per 100,000 person-years in Mexico and 4.42 (95% CI: 3.26–5.58) per 100,000 person-years in Brazil. The estimated incidence rates of viscerotropic-like disease were 2.83 (95% CI: 2.14–3.67) and 1.11 (95% CI: 0.36–2.58) per 100,000 person-years, respectively.

Conclusions: The estimated incidence of neurotropic-like diseases is broadly consistent across countries and with available data from the literature.

66. Determination of Days Since Last Active Medical Support for Chronic Lung Disease, Associated with Respiratory Syncytial Virus Hospitalizations in Infants

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Background: The high cost of passive immunization with monoclonal antibody for RSV infection has resulted in restrictive selection of high-risk patients. Chronic lung disease (CLD) is the exclusive criterion that qualifies children for prophylaxis in their second year of life if they required active CLD treatment within 6 months before RSV season onset.

Objectives: This study aimed to determine the risk for RSV hospitalizations in children with active CLD and to examine risk variation by days since last active treatment.

Methods: This was a retrospective cohort study using Florida and Texas Medicaid claims data linked to birth certificates for children aged 0–24 months and their mothers between 1999 and 2010. CLD treatment was ascertained from medical or pharmacy claims related to diuretics, steroids, oxygen supplementation or ventilation requirement on birth certificates, whichever occurred last before start of every 15-day time block during the RSV season (November to February). Days since last treatment were categorized (1–30, 31–60, 61–90, 91–120, 121–150, 151–190 and 191–245) to estimate hazard ratios using a time dependent covariate Cox regression model.

Results: A total of 1,321,091 infant-seasons were included in the analysis and 7,820 infants received medical support for CLD within up to 8 months before a season time-block. During the 4-months RSV season, 7,634 RSV hospitalizations occurred. In multivariate analyses, CLD requiring active treatment was highly associated with RSV hospitalizations (HR 2.60, 95% CI 2.09–3.24). The elevated risk decreased around 91–120 days since last active treatment (91–120 vs. 1–30 days: HR 0.48, 95% CI 0.24–0.97) and remained steady thereafter.

Conclusions: Infants with evidence of active CLD treatment had a greater likelihood of RSV hospitalizations. Last active treatment for CLD less than 3 month from any time during RSV season was associated with an increased risk for RSV hospitalizations.

67. Income-Driven Food Insecurity Drives Treatment Non-Adherence and Virologic Failure in HIV/HCV-Coinfected Individuals

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Background: Virologic failure, defined as the inability to suppress HIV viral replication, continues to be common among HIV-infected people. Although non-adherence to antiretroviral therapy (ART) is the main

determinant of virologic failure, distal variables such as socioeconomic status could lead to this outcome through other factors.

Objectives: To identify the distal predictors of HIV virologic failure in HIV/HCV-coinfected people.

Methods: We analyzed data from a Canadian multi-center prospective cohort study following HIV-HCV co-infected adults every 6 months between 2012 and 2015. Only participants receiving ART and participating in the Food Security Substudy were included in this analysis ($N = 663$; 75% male). Self-administered questionnaires collected information on socioeconomics (e.g., age, gender, education, income), behaviour (e.g., drug and alcohol use, mental disorders) and treatment (e.g., ART regimen, time on ART, HCV medications). Clinical measures (e.g., HIV RNA, CD4+) were also recorded. Adherence to ART was assessed through self-report, as were measures of food insecurity using the adult scale of Health Canada's Household Food Security Survey Module (HFSSM). Generalized estimating equations were used to identify the following: (1) the predictors of virologic failure (defined as HIV-RNA level > 1000 copies/ml); (2) the factors associated with its strongest predictor: treatment non-adherence; and (3) the factors associated with predictors of non-adherence.

Results: At baseline, 4% of participants had virologic failure and 20% reported having missed any HIV treatment doses in the past 4 days. In a multivariate analysis, the only direct predictor of virologic failure was non-adherence to ART, which increased the odds of virologic failure by almost four times ($OR = 3.9$; $p \leq 0.01$). Non-adherence was predicted by having younger age ($OR = 1.6$; $p \leq 0.01$) and having skipped meals ($OR = 1.6$; $p \leq 0.01$). Skipping meals was in turn associated with having lower monthly income ($OR = 1.4$; $p = 0.03$), not working ($OR = 2.1$; $p \leq 0.01$), living alone ($OR = 1.5$; $p \leq 0.01$) and using injection drugs ($OR = 5.0$; $p \leq 0.01$).

Conclusions: Although the only direct association with virologic failure was non-adherence, distal factors such as socioeconomic status and drug use may still be relevant when conceptualizing interventions to improve therapeutic success. ART non-adherence may be driven by a constellation of negative factors associated with food insecurity and poverty.

68. Cumulative Viral Load and Incident Myocardial Infarction: Handling the Initiation of Antiretroviral Therapy

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Background: Persons living with HIV (PLWH) are at increased risk of cardiovascular events including type 1 (atheroembolic) myocardial infarction (MI). The extent to which various HIV-specific risk factors contribute to this increased risk is unclear.

Objectives: To understand whether burden of cumulative viral load (VL) is associated with increased rates of MI, even in the context of active antiretroviral therapy (ART).

Methods: The CFAR Network of Integrated Clinical Systems (CNICS) is a multi-center cohort with 8 clinical sites and $>22,000$ patients followed during routine clinical care. The repository includes comprehensive clinical data and centrally adjudicated MIs providing a definitive, well-validated clinical outcome. Cumulative VL (copy-years of virus in a participant) was estimated using measures obtained from routine care and fit with a time-weighted sum using the trapezoidal rule. We modeled the association between cumulative VL and incident MI using marginal structural Cox models. Inverse probability weights were estimated using age, sex, site, race, smoking, diabetes, treated hypertension, statin use, and nadir CD4. We examined types 1 and 2 MIs separately, as a secondary analysis. VL was transformed into $\log(\text{viral load} + 1)$.