

### 573. Effectiveness of Second-Line Antiretroviral Therapy: The Impact of Drug Switches

Letícia P. Braga, Cássia C.P. Mendicino, Edna A. Reis, Ricardo A. Carmo and Cristiane A. Menezes de Pádua

*Universidade Federal de Minas Gerais, Belo Horizonte, Brazil*

**Background:** Including antiretroviral drug switches as a measure of ART failure could be more suitable than conventional measures to evaluate health outcomes in 'real-world' settings.

**Objectives:** Evaluate the effectiveness of second-line ART in HIV-infected adults participating in a historical cohort study, comparing two scenarios by using different parameters to characterize ART failure.

**Methods:** This is part of a historical cohort of HIV-infected adults who initiated ART from 2001 to 2005, and were followed up for a maximum of five years, conducted in three HIV/AIDS centers in Belo Horizonte, Brazil. Follow-up information included data from 2001 to 2010. All patients switched from first-line to second-line ART were included. Second-line ART effectiveness was measured as the time-to-ART failure. Failure was defined simulating to scenarios: (1) Clinical, immunological and virological failure (scenario 1); or scenario 1 plus ART switches (scenario 2). Descriptive analysis, Kaplan-Meier curves, log-rank test, and Cox proportional hazards model were performed.

**Results:** A total of 119 patients were eligible; most had protease inhibitor (PI)-based regimens prescribed as second-line. The incidence of failure was different for the two scenarios (29.4% vs. 54.6% for scenario 1 and 2, respectively;  $p=0.00$ ). The main identifiers of failure were increase in viral load (31.1%) for scenario 1 and ART switches (42.8%) for scenario 2. Median duration on second-line ART was 36.8 vs. 19.8 months for scenario 1 and 2, respectively. In the Cox analysis of scenario 2, increased risk was found for patients given PI-based second-line regimens (HR = 2.26; 95% CI: 1.09–3.17).

**Conclusions:** There is a high incidence of ART failure associated with PI-based regimens when ART switches are considered as an indicator of failure. This demonstrates the impact of ART switches in representing lack of ART effectiveness.

### 574. Association of the Number of Antibiotics Received and *Clostridium difficile* Infection Among Patients Admitted to the Intensive Care Unit

Carlos Alvarez Alvarez<sup>1</sup>, Peia Lee<sup>1</sup>, David Fike<sup>1</sup>, Eric M. Mortensen<sup>2</sup>, Steven E. Pass<sup>1</sup> and Ronald G. Hall<sup>1</sup>

<sup>1</sup>Texas Tech University Health Sciences Center, Dallas, TX; <sup>2</sup>University of Connecticut School of Medicine, Farmington, CT

**Background:** *Clostridium difficile* infection (CDI) is a common hospital acquired infection that leads to significant morbidity and mortality occurs in patients admitted to the intensive care unit (ICU). There is a lack of studies that have examined the association of CDI with the number of antibiotics administered in the ICU.

**Objectives:** To determine if the number of antibiotics received during an ICU admission is associated with CDI.

**Methods: Design:** Retrospective cohort study conducted between 2001 and 2008. **Setting:** Patient data were extracted from the MIMIC II clinical database which includes ICU patient records from a single tertiary care hospital. Patients >18 years old, admitted to the medical, surgical, coronary, and cardiac ICUs were included in the study. **Exposures:** Antibiotic exposures were defined as the number of the following classes received during a patient's ICU stay: penicillins, cephalosporins, fluoroquinolones, lincosamides, nitroimidazoles, and non-oral vancomycin. **Main Outcome Measures:** CDI was identified using *International Classification of Diseases, Ninth Revision* (ICD-9) diagnostic code 008.45 at discharge. **Statistical Analysis:** Multiple logistic regression analysis was used to examine the association of the exposure to CDI after adjusting for patient age, comorbidities, feeding tube placement, gastrointestinal surgical procedures, hospital length of stay, methotrexate exposure, and proton pump inhibitor exposure. Ninety-five percent confidence intervals were calculated using robust standard errors.

**Results:** A total of 16,820 ICU patients were included in the study. The mean age was 63 years old (SD ±17) and 56.7% of the patients were male. The mean hospital length of stay was 10.2 days (SD ± 11). The proportion of patients who experienced CDI during ICU stay was 2.4%. Sixty-six percent of patients did not