

## **Abstract**

Gender differences in retention in care in a prospective cohort of HIV-infected adults in Tigray, Ethiopia

Raffaella Bucciardini<sup>1</sup>, Paola Tatarelli<sup>2</sup>, Vincenzo Fragola<sup>1</sup>, Teshome Abegaz<sup>3</sup>, Stefano Lucattini<sup>1</sup>, Atakilt Halifom<sup>4</sup>, Eskedar Tadesse<sup>3</sup>, Micheal Berhe<sup>3</sup>, Katherina Pugliese<sup>1</sup>, Paola De Castro<sup>1</sup>, Roberta Terlizzi<sup>1</sup>, Luca Fucili<sup>1</sup>, Massimiliano Di Gregorio<sup>1</sup>, Marco Mirra<sup>1</sup>, Teame Zegeye<sup>4</sup>, Annamaria Giammarioli<sup>1</sup>, Stefano Vella<sup>1</sup>, Loko Abraham<sup>3</sup>, Hagos Godefay<sup>4</sup> and the CASA-project Health Facilities.

<sup>1</sup> Istituto Superiore di Sanità, Rome, Italy, <sup>2</sup> Division of Infectious Diseases, Department of Health Sciences (DISSAL), IRCCS AOU San Martino-IST, University of Genoa, Genoa, Italy, <sup>3</sup> College of Health Sciences, Mekelle University, Mekelle, Ethiopia, <sup>4</sup> Tigray Regional Health Bureau, Mekelle, Ethiopia

### **Background:**

Despite the undisputed success in access to HIV care and treatment in lower-middle-income countries over the last decade, long term retention in care still represents a major challenge in this setting. Identification of major determinants of attrition is needed to design appropriate interventions. The aim of this study is to investigate gender-related differences in retention in care.

### **Methods:**

We used data from the CASA-project, a prospective, multi-site study of a cohort of HIV-infected patients who started antiretroviral therapy (ART) in seven health facilities (HFs) in Tigray, Ethiopia. We analysed data of over 1500 patients. The ART outcome measures were attrition for care, loss to follow-up and mortality by gender between January 2013 and December 2016. Baseline characteristics were described with summary statistics by gender. Difference between proportion were tested with Person's chi-squared test or Fisher's exact test. Cox Proportional Hazards models were used to assess crude and adjusted association between baseline patient characteristics and outcomes. All available baseline demographic and clinical variables which resulted as potential confounders in the univariate analysis were included in the multivariate analysis: type of HF, gender, age (14-25, 26-50, >50), educational status (no education, primary, secondary, tertiary), BMI ( $\leq 18.5$ , 18.6-25,  $> 25$ ), WHO clinical stage (I/II or III/IV), CD4 cell count ( $< 200$  or  $\geq 200$  cell/mm<sup>3</sup>), hemoglobin level ( $\leq 10$  or  $> 10$  g/dl) and active tuberculosis.

### **Results:**

Univariate Cox proportional hazard model showed that males had a higher risk of attrition than females (HR 1.62, 95% CI: 1.34-1.95), a higher risk of loss to follow-up (HR 2.09, 95% CI: 1.49-

2.94) and a higher risk of mortality (HR 2.03, 95% CI: 1.32 – 3.13). In the multivariate analysis, after adjusting for potential confounding factors, male continued to have a higher risk of attrition (HR 1.49, 95% CI: 1.20-1.84) and loss to follow-up (HR 2.00, 95% CI: 1.38-2.93).

**Conclusions:**

According to our data HIV infected men have a higher risk of attrition for care than females. Our prospective cohort will try to explore the role of additional determinants.