Oral Communication Session/Topic: **Clinical and epidemiology aspects**

N.	Title:

OC 17 **Trend and causes of hospitalizations among patients with HIV entering care in Italy: a 15 years study from the Icona cohort**

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Abstract:

Background: Declining rates of hospitalizations occurred shortly after the availability of combination antiretroviral therapy (cART). However, trends in the late cART era are less defined, and data on the impact of cART use on the different causes of hospitalization are needed.

Methods: We included HIV-infected persons enrolled in 1997-2012 in the Icona Foundation Study cohort; a hospitalization was considered if occurred for >1 day at least 30 days after the enrollment. Participants' follow-up accrued from the date of enrolment (baseline) to a hospitalization or their last visit. Participants could be included in multiple periods and could contribute more than 1 hospitalization per period.

Incidence of hospitalizations (per 100PYFU) were calculated for the overall study period, for the following study periods characterized by different availability of ART: 1997-1999 (early cART); 2000-2005 (cART); 2006-2009 (late cART); 2010-2012 (new classes cART), by CD4 count (grouped as 0-200, 201-350, 351-500, and >500), by HIV-RNA (<=400, >400) and by age (18-34, 35-49, >=50).

Causes of hospitalization were grouped in AIDS defining illness (ADI), non-AIDS infections (i.e. pneumonia, endocarditis, meningitis), liver/gastrointestinal, cardiovascular, psychiatric, hematological and renal diseases and non-AIDS cancer.

Results: Of the 10,527 participants (25.3% females, 38.2% heterosexuals, 26.6% with HCV; median age 36 years (IQR 31-42)), for a total of 51,281 PYFU, 1562 (15%) were hospitalized at least once with 2822 separate hospital admissions (mean LOS 16.8±18.1 days, corresponding to 0.22% of total PYFU), resulting in a rate of hospitalization of 5.5 per 100 PYFU. The rate decreased from 9.9 in 1997-1999 to 4.2 in 2010-2012 (p<0.001, test for linear trend over time).

Overall, hospitalization were due mostly to ADI and to non-AIDS infections; a significant decrease by study period was observed in ADI (p<0.001), non AIDS infections (p<0.001) and liver/gastrointestinal (p<0.001) diagnostic categories; cardiovascular disease remains unchanged while for non-AIDS cancers a significant increase was observed (p<0.01) (Figure 1).

In a multivariable model, older age, late presentation, IDU risk factor, HCV coinfection, HIV-RNA >400 copies/ml were associated with a significant increase of the risk of hospitalization, while higher CD4, more recent ART period and male gender were associated with a significant reduction of the risk of hospitalization (Table 1).

Conclusions: Our findings show that hospitalization rates decrease during time in ICONA patients; this decrease is striking during the period 2000-2005 and for ADI and non-AIDS infections, which however are responsible for more than 50% of hospitalization even in the more recent time period.

Table 1. Poisson regression analysis of factors associated with hospitalizations. For each factor, we considered the most recent value within the previous 12 months from the hospitalization, except for time fixed covariates (i.e. gender, exposure category to HIV, late presentation).

	Relative rates	95% CI
Gender		
F	ref	
M	0.78**	(0.72-0.86)
Age		
18-35	ref	
36-49	0.99	(0.90-1.09)
>=50	1.28**	(1.13-1.45)
Late presentation		
No	Ref	
Yes	1.13**	(1.03-1.24)
Exposure category to HIV		
IDU	Ref	
MSM	0.60**	(0.52-0.68)
HET	0.52**	(0.47-0.59)
Other/unknown	0.85*	(0.72-0.99)
Cd4 count		
<200	ref	
200-349	0.36**	(0.32-0.40)
350-499	0.21**	(0.19-0.24)
>=500	0.14**	(0.12-0.15)
HIV-RNA		
<=400	ref	
>400	1.37**	(1.29-1.49)
HCV confection		
No	ref	
Yes	2.41**	(2.18-2.67)
ART period		
1997-1999	ref	
2000-2005	0.79**	(0.71-0.88)
2006-2009	0.75**	(0.67-0.85)
2010-2012	0.73**	(0.64-0.82)

**pvalue<0.001
*pvalue<0.05

Figure 1. Hospitalization rates distribution by ART period for the most frequent diagnostic categories (crude rates per 100PYFU).