



Oral Communication

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OC 60 Gender differences in HCV exposure, active replication and genotypes in HIV patients entering care in Italy

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Abstract:

Background: We previously documented that female gender was independently associated with a higher probability of a positive HCV-antibody (HCVAb) status. Here we detail how gender and social and behavioral determinants are associated with positive HCVAb, HCV RNA and HCV genotype in HIV + patients enrolled in ICONA from 1997 to 2016.

Methods: All pts enrolled in ICONA with a known HCVAb status (n=13,756) were analyzed. The association with HCVAb+ and with HCV RNA+ status were analyzed by multivariate logistic regression. Models were used either by splitting risk behaviors for HIV acquisition by gender or not. Changes of HCV genotype over calendar year were analyzed in different genders by X2 test for trend.

Results: Females were 24%; 3,575 (26%) were HCVAb+: 911/3,349 females (27%) and 2,664/10,407 (26%) males (p=0.07). Median age was 37 years (IQR 31-44), 15% had AIDS, 19% had a history of IDU, 6% were HBsAg+, 22% antiHBc+, 84% Italian-born. HIV transmission modes were heterosexual contacts in 38%, MSM in 35% and IDU in 19%. A positive HCV RNA was available in 1,684: 431/3,349 females (13%) and 1,253/10,407 (12%) males. Secondary school education was reported in 9%; 63% were employed. Among 1,491 with known HCV genotype (G), 49.7% had G1, 31% G1a, 13% G1b, 5% G1 not specified, 34.7% G3, 11.3% G4, 3.6% G2 and 0.7% mixed. G3 was more frequent in females (39.7% vs males 34.7%) while G1 in males (49.7% vs 41.4%, 1a 31.4% vs 26.1%). Based on calendar year of HIV diagnosis, HCVAb+ status declined from 1991-2 to 2015-6 from 69% to 6.6% in males and from 53% to 7.1% in females. During the same period HCV G1a increased in males from 24% to 48% (p=0.01) while G3 remained stable and high in women. After adjusting for risk behaviors, females had a independent higher probability of being HCVAb+ (AOR 1.34; 95%CI 1.13-1.60) and HCV RNA+ (AOR 1.39; 1.12-1.73). In models splitting risk behavior by gender (tab), as compared to heterosexual men, heterosexual women, IDU men, IDU women as well as MSM who were also IDU were all independently associated with a higher adjusted odds ratio of HCVAb+. Other independently associated factors were older age, HBsAg+ status, lower education levels, stable partnership with HIV+ as compared to occasional partners with unknown HIV status, native vs immigrant and smoking status. The same factors, except HBsAg, were very similarly associated with HCV RNA+. The same associations were found after excluding MSM. When only women were analysed, IDU, smoking status, lower education, native vs immigrant but not the type of partnership, age or HBsAg+ status were associated with HCVAb+.

Conclusions: Although prevalence of HCV infection is declining during recent years, females show a higher risk of HCV infection, independent from other measurable confounders and are more frequently infected with genotype 3, known to be a difficult to treat genotype. This more vulnerable population requires specific preventive and treatment interventions for HCV.

Table. Factors associated with HCVAb+ and HCVRNA+ status. Multivariable models.*

Variables	HCVAb+ status		HCV RNA+ status		HCVAb+ status (Excluding MSM)		HCVAb+ status (only females)	
	AOR (95% CI)	p	AOR (95% CI)	p	AOR (95% CI)	p	AOR (95% CI)	p
Age (+10 years)	1.07 (1.00-1.14)	0.037	1.10 (1.01-1.19)	0.024	0.98 (0.90-1.07)	0.648	1.02 (0.90-1.15)	0.740
Risk factor								
Heterosexual M	1.00		1.00		1.00		-	
Heterosexual F	1.27 (1.03-1.57)	0.028	1.30 (0.97-1.74)	0.076	1.25 (1.01-1.56)	0.043	1.00	
Heterosexual+IDU	16.56 (11.33-24.21)	<0.001	18.08 (11.64-28.09)	<0.001	-		17.03 (9.35-31.01)	<0.001
IDU M	147.29 (106.97-202.82)	<0.001	122.62 (82.71-181.80)	<0.001	177.51 (124.30-253.51)	<0.001	-	
IDU F	196.30 (126.00-305.81)	<0.001	160.67 (96.71-266.92)	<0.001	225.23 (141.00-359.78)	<0.001	148.35 (87.68-251.03)	<0.001
IDU MSM	4.58 (2.30-9.09)	<0.001	4.88 (2.17-10.98)	<0.001	-		-	
MSM	1.15 (0.87-1.52)	0.314	1.03 (0.71-1.48)	0.883	-		-	
Natives vs migrants	1.59 (1.30-1.92)	<0.001	1.54 (1.19-2.00)	0.001	1.64 (1.27-2.13)	<0.001	2.00 (1.45-2.78)	<0.001
HBsAg+ vs HBsAg-	1.44 (1.13-1.83)	0.003	1.04 (0.74-1.47)	0.809	1.01 (0.71-1.42)	0.976	1.39 (0.80-2.42)	0.240
Education								
Primary school	1.00		1.00		1.00		1.00	
Middle school	0.90 (0.70-1.15)	0.391	1.14 (0.84-1.56)	0.407	1.06 (0.78-1.44)	0.718	1.10 (0.73-1.67)	0.641
High school	0.66 (0.51-0.85)	0.001	0.83 (0.60-1.15)	0.260	0.74 (0.53-1.02)	0.062	0.74 (0.48-1.15)	0.183
University	0.52 (0.38-0.73)	<0.001	0.70 (0.46-1.06)	0.091	0.46 (0.27-0.80)	0.006	0.42 (0.20-0.88)	0.021
Sex partner								
Occasional, HIV+	1.68 (0.97-2.89)	0.063	2.28 (1.15-4.51)	0.018	1.48 (0.83-2.62)	0.185	1.29 (0.61-2.74)	0.512
Occasional, HIV unknown	1.00		1.00		1.00		1.00	
Stable, HIV unknown	1.21 (0.94-1.57)	0.136	1.38 (0.98-1.95)	0.069	1.22 (0.94-1.58)	0.142	0.79 (0.56-1.13)	0.201
Stable, HIV+	1.93 (1.49-2.50)	<0.001	1.88 (1.31-2.70)	0.001	1.78 (1.36-2.33)	<0.001	1.24 (0.86-1.76)	0.246
Smoker vs non smoker	1.49 (1.29-1.71)	<0.001	1.64 (1.37-1.95)	<0.001	1.69 (1.40-2.04)	<0.001	1.90 (1.45-2.49)	<0.001

*All models adjusting for listed factors plus country region of residence and employment; F, female; M, male; IDU, injecting drug user; MSM, men who have sex with men; AOR, adjusted Odds Ratio; CI, confidence interval