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GOLDEN COMMUNICATIONS I

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Testosterone (T) is poorly related to Erectile Dysfunction (ED) in Young/Middle Aged Human immunodeficiency virus (HIV)-Infected Men

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BACKGROUND: HIV infection is strongly associated to ED in men[1,2]. Preliminary data suggests that ED is poorly associated with serum T in HIV+ men[1,3-4].
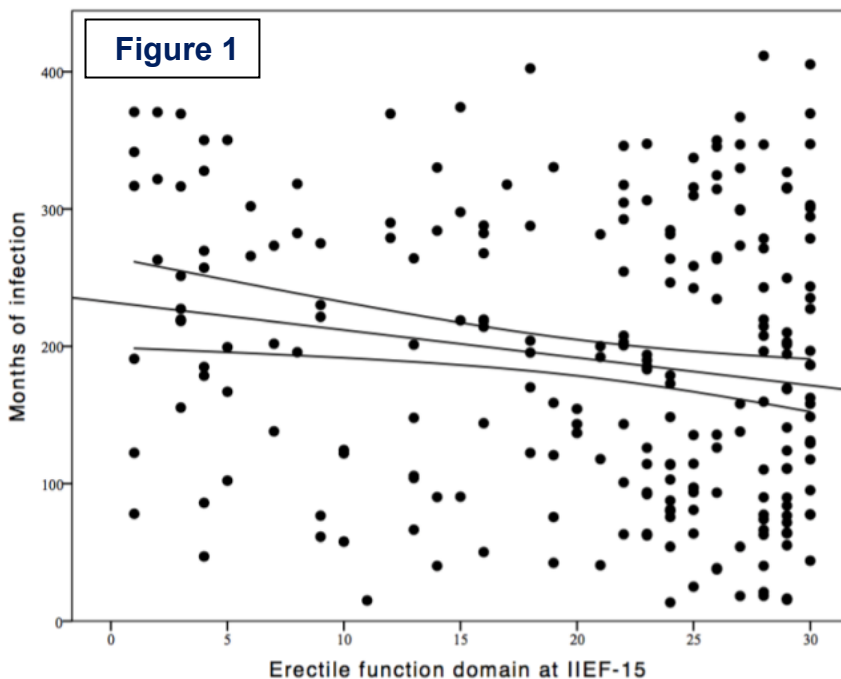
AIM: To investigate the relationship between sexual function as assessed by the validated International Index of Erectile Function (IIEF-15) and T deficiency in HIV-infected men by assessing circulating T by Liquid Chromatography tandem Mass Spectrometry (LC-MS/MS).

METHODOLOGY: Prospective, cross-sectional, observational study on 233 consecutive HIV-infected male patients with ongoing Highly Active Antiretroviral Therapy (HAART), attending the Clinic of Infectious Diseases. IIEF-15 questionnaire was used to define patients having ED (score ≤25), IIEF-5 was performed to check if it is reliable as IIEF-15 in this setting, while LC-MS/MS was used for hormonal assays. ***Statistical analysis:*** Continuous and categorical variables were compared using ANOVA univariate and Chi-Square test, respectively. Correlations were performed using Spearman's Rho coefficient.

RESULTS: 233 HIV-infected patients were enrolled (mean age 45.29±5.33 years) with average duration of HIV-infection of 195.98±129.54 months. Eight patients (3.4%) had hypogonadism, defined as total T serum levels below 300 ng/dL. 142 patients (61.5%) had ED (EF score ≤25) (**Table 1**). Age, hormonal data and duration of HIV infection and HAART did not differ among groups of patients according to the degree of ED (**Table 1**).

Table 1	Number of patients (%)	IIEF-5	EF score at IIEF-15	Age (years)	Duration of HIV-infection (months)	Testosterone (ng/dL)	E2 (pg/ml)	E2/T ratio
None ED	89 (38.5)	23.0±2.0	28.4±1.4	44.8±5.4	185.0±108.7	672.4±235.1	27.1±9.9	0.004±0.001
Mild ED	72 (31.2)	18.9±3.0	22.4±2.3	45.0±5.6	174.4±95.7	711.2±219.6	26.9±9.7	0.004±0.004
Moderate ED	26 (11.3)	14.0±3.7	14.2±1.6	46.0±5.2	202.0±105.7	640.0±219.9	27.0±10.8	0.004±0.001
Severe ED	44 (19.0)	10.9±7.9	4.9±2.9	46.4±4.6	222.7±95.6	602.2±201.1	23.7±9.7	0.004±0.002
p-value	-	*<0.001*	*<0.001*	*0.330*	*0.083*	*0.074*	*0.320*	*0.977*

Although no differences were seen among categories, the direct comparison of each ED cluster showed that months of infection were significantly higher in men with severe ED compared to mild ED (p=0.037); moreover, men with severe ED had lower T levels than men with mild form (p=0.029). All hypogonadal men had erectile dysfunction (p=0.020). However, no differences were found among ED degree for hypogonadal men (p=0.151). The erectile function domain at IIEF-15 was directly correlated with IIEF-5 score (0.778, p<0.001), as expected. Moreover, the IIEF-15 score was inversely related to months of infection (-0.147, p=0.026) (Figure 1), but not to months of HAART therapy (-0.121, p=0.071). Total T showed an inverse relation with months of infection (-0.172, p=0.009) (**Figure 1**) and months of HAART (-0.173, p=0.010), but not with IIEF-15 score (0.039; p=0.559).

Figure 1

CONCLUSIONS: To the best of our knowledge, this is the first, properly-designed prospective study aiming to investigate the relationship between erectile function and serum T, assessed using the LC-MS/MS in HIV-infected men. Similarly to the IIEF-15, the IIEF-5 recognize ED patients and the scores of both correlates each other. In our cohort, the prevalence of ED and hypogonadism was 61% and 3.4%, respectively. Thus, ED evaluated by IIEF-15 seems to be not directly related to serum total T, but it correlates with age and months of infection. In conclusion, in HIV-infected patients a) IIEF-5 is reliable as IIEF-15 for ED diagnosis, b) ED is not associated with serum T, c) erectile function is not influenced by T and HAART, but only by HIV-infection duration. In conclusion, several specific factors, such as the duration of HIV infection, are involved in erectile function in HIV-infected men and should be carefully considered in this setting, while hormonal status seems to be less important.

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