Burden of comorbidities in HCV patients only and HIV-HCV co-infected patients in a real- world setting: retrospective study.

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AIM: The aim of this study was to estimate the direct healthcare costs and resources use in the management of patients mono-infected with HCV and co-infected HCV-HIV, to assess main cost drivers in the two patients cohorts and highlight any relevant differences in comorbidities compared to the general population.

METHODS: An observational retrospective cohort analysis, based on administrative and laboratory databases from 7 Local Health Units (LHUs) was performed. Patients diagnosed (through hospitalizations, specific treatments or blood test results) with HCV or HCV-HIV co-infection between January 1st, 2014 and December 31st, 2014 were included in the analysis. The Index Date (ID) was defined as the date of the first HCV diagnosis criteria within the inclusion period. All patients were followed for one year from the ID (follow-up period), and their clinical characteristics were investigated for one year before to the ID (characterization period). Patients with an HCV diagnosis who had a prescription for an HIV during the characterization period were defined as "co-infected HCV-HIV". Comorbidities were measured by using the Charlson Comorbidity Index (CCI).1 The CCI is an indicator that uses the ICD-9-CM codes of hospitalizations or ATC code on drugs prescribed as a proxy of pathology. Prescriptions for non-HCV or HIV-related drugs were used as informative of the presence of a comorbidity in both cohorts; findings were compared with those for a sample of the general population with the same age and sex distribution (OsMed 2015).2

A generalized linear regression model was developed to identify the associations between total health care costs during the follow-up period and the presence of the co-infection with HIV, male gender, age and naive patient. P-values of ≤0.05 were considered to be statistically significant.

RESULTS: A total of 584 HCV mono-infected and 126 HCV/HIV co-infected patients were included in the analysis. The average age was 55.5 and 50.9 ($p<0.001$) in a cohort of HCV mono-infected and HCV-HIV co-infected patients, respectively. Results show that, for both HCV mono-infected and HCV- HIV co-infected, the frequency of the use of drugs for the treatment of comorbidities is higher than the frequency reported in the general population sample, with the difference increasing with age.

HCV mono-infected patients were found to have a higher consumption, if compared to Italian general population sample, of the following drugs: anti-hypertensives (+37.1%), anti-diabetics (+122.2%), drugs for COPD (+12.3%), drugs for the management of osteoporosis (+50%), antidepressants (124.6%) and antiacid or antisecretory agents (+64%); while, HCV-HIV co-infected patients were found to have a higher consumption, compared to general population, sample, of the following drugs: anti-diabetics (+46.3%), drugs for the management of osteoporosis (+77.8%) and antidepressants (+108.2%).

The average annual healthcare cost for the management of an HCV-HIV co-infected patient proved to be higher than the cost for an HCV mono-infected patient (€ 11,111 vs € 8,925).

The generalized regression model found that a statistically significant increase in the overall cost was caused by: the age range between 46-65 (+3,032 €, p=0.001), the patient age ≥ 76 years (+3,332 €, p=0.027), male gender (+1,639 €, p=0.045), naive patients (+2,509 €, p=0.008), the presence of an HIV co-infection (+ 4,252 €, p=0.002).

CONCLUSION: This retrospective analysis suggests that a higher prevalence of comorbidities can be expected in HCV±HIV patients compared to the general population. The study highlights for the prescription of HCV and HIV treatments that minimize the risk of drug-drug interactions and the need for the management of comorbidities, that result from long-term virus exposure.

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