Mortality rate in patients on methadone treatment and infected with the human immunodeficiency virus and/or the hepatitis C virus

Mortalidad entre los pacientes en tratamiento con metadona e infectados con el virus de la inmunodeficiencia humana y/o hepatitis C

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Dear Director,

Heroin addiction is a chronic, relapsing disease with serious consequences, particularly in terms of premature and high mortality (Hser, Hoffman, Grella & Anglin, 2001). Methadone maintenance treatment programs (MMT’s) have shown to be effective in reducing illicit opioid use and the risk of infection with human immunodeficiency virus (HIV) and/or Hepatitis C virus (HCV), among other (Kleber, 2008; Pedrero-Pérez & MethaQoL, 2017).

Nevertheless, the approximately 1% annual mortality among MMT patients is more than 10 times that of the general population (Zanis & Woody, 1998); and overdose, HIV infection (VIH), and other viruses transmitted by blood (e.g., HCV infection) constitute the most common causes of death (Roncero, Vega, Martinez-Raga & Torrens, 2017).

In fact, among HIV-infected patients, HIV–HCV co-infection is observed in 50–95% of cases (Muga, Roca, Egea, Tor, Sirera & Rey-Joly, 2000); this simultaneous HIV infection can cause an increased viral load of HCV and a more rapid evolution to liver cirrhosis and its complications (Santos & Sanz, 2004; Elizalde, Iniarraireagui, Rodríguez & Zozaya, 2004).

Therefore, the objective of this paper was to analyze the influence of HIV and HCV infection on the survival of patients included in MMT’s programs.

For this, an observational retrospective study was conducted of mortality over a ten-year period (2005–2014) in a cohort of heroin-dependent patients included in the MMT program of a care unit specializing in the outpatient treatment of addiction and substance abuse disorders at the Hospital Real de Nuestra Señora de Gracia in Zaragoza, Spain.

The sample comprised 299 patients at baseline (2004) and 253 patients at the end of the study period (2014). Data concerning gender, age, body mass index, methadone dose, age of inclusion in the MMT, year of diagnosis of HIV and/or HCV infections, and mortality were obtained from electronic and manual clinical records.

The patients were divided into four groups based on the presence or absence of HIV and HCV infections (non-infected, group 1; VIH-infected, group 2; VIH and VHC co-infected, grupo 3; VHC-infected, group 4); then, overall mortality from all causes, as well as the crude mortality rate (CMR) were calculated, the later for each patient group and expressed as the number of deaths per 100 patient-years of follow-up.

Finally, the influence of HIV and/or HCV infections on overall mortality was assessed by comparing the CMR data from groups 2 to 4 (those infected with HIV and/or HCV) versus group 1 (non-infected patients).

By the end of the study period (10 years), there had been 46 deaths (15.4%) and a calculated CMR of 0.9%, 2.2%, 2.6%, and 1.7% corresponding to groups 1 to 4, respectively.

Regarding the influence of HIV or HCV infection, the greatest difference in CMR was between the co-infected group 3 and the control group 1 (0.9% vs .2.6%; p = .0113*). Comparisons among the rest of the groups were smaller and not statistically significant. However, when considering HIV patients in Groups 2 and 3 and HCV pa-
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The obtained data seem to indicate that HIV and HCV infection, and especially co-infection, along with factors directly related to the treatment of co-morbidities, such as antiretrovirals, tuberculostatic drugs, and psychotropic drugs, which can often be hepatotoxic, play a key role in morbidity and mortality in this cohort of patients.

Therefore, the introduction of new antiretroviral and therapeutic regimens and pharmacotherapeutic follow-up of both adherence to treatment and its side effects for patients with acquired immune deficiency syndrome; as well as the adoption of new antivirals for the treatment of hepatitis C, would be key factors to increase survival in this type of patient.

Finally, it should be noted, as the most important limitations of this analysis of mortality, due to sample size and absence of data, that it could not assess the influence of other factors, such as gender, age, or concomitant treatments for infectious and psychiatric co-morbidities.

Conflict of interests

The authors declare no conflict of interest.

Table 1. Patient characteristics and results.

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<tbody>
<tr>
<td>Patient characteristics</td>
<td></td>
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<tr>
<td>Age, years</td>
<td>47 (7.7)</td>
<td>48 (7.5)</td>
<td>47 (8)</td>
<td>46 (6.6)</td>
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<tr>
<td>Female, No. (%)</td>
<td>26 (28)</td>
<td>20 (43)</td>
<td>16 (19)</td>
<td>22 (32)</td>
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<tr>
<td>BMI, kg/m²</td>
<td>25.6 (3.4)</td>
<td>24 (6)</td>
<td>23 (4)</td>
<td>26 (6)</td>
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<td>Years on TMM</td>
<td>15 (7.7)</td>
<td>16 (7.6)</td>
<td>15.3 (8)</td>
<td>13.8 (6.6)</td>
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<td>MTD dose, mg</td>
<td>56 (32)</td>
<td>61 (41)</td>
<td>65 (35)</td>
<td>55 (31)</td>
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<td>Results</td>
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<tr>
<td>Patients, No. (%)</td>
<td>92 (30.8)</td>
<td>54 (18.1)</td>
<td>85 (28.4)</td>
<td>68 (22.7)</td>
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<td>Exitus, No. (%)</td>
<td>9 (9.8)</td>
<td>10 (18.5)</td>
<td>18 (21.2)</td>
<td>9 (13.2)</td>
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<td>Patient-years</td>
<td>87</td>
<td>45</td>
<td>69</td>
<td>53</td>
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<td>CMR, (%)</td>
<td>0.9</td>
<td>2.2</td>
<td>2.6</td>
<td>1.7</td>
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<td>Fisher’s test (p)</td>
<td>comparator</td>
<td>.0734</td>
<td>.0113*</td>
<td>.092</td>
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</table>

Note. All data are expressed as mean (± SD), unless otherwise indicated.

*p ≤ .05; DS = standard deviation; BMI = body mass index; MTD = methadone, No. = number, CMR = crude mortality rate; MMT = methadone maintenance treatment.

References


Santos, I. & Sanz, J. (2004). Tratamiento con interferón y ribavirina de la hepatitis crónica por virus C en pacientes con infección por VIH. Anales de Medicina Interna, 21, 369-372.