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# The impact of hepatitis C virus and human immunodeficiency virus coinfection on survival in patients with hepatocellular carcinoma

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We read with great interest the article by Alkhalili *et al* [1], who concluded that, despite presenting with more advanced cirrhosis and being less likely to undergo surgery, patients with hepatocellular carcinoma (HCC) associated with viral hepatitis had similar survival to patients with HCC of non-hepatitis B, non-hepatitis C etiology. But do these results reflect the whole picture?

Hepatitis C virus (HCV) and human immunodeficiency virus (HIV) share a common route of transmission, so that about one third of HIV infected individuals show HCV co-infection [2]. Highly active antiretroviral therapy has offered a longer and better life to infected patients. While this has removed HIV-related diseases from the list of most common causes of death, their place has been taken by complications of HCV infection, such as cirrhosis, end-stage liver disease, and HCC. HIV-HCV co-infection requires complex management, especially when HCC is present [2]. According to current guidelines, HCC treatment is the same for patients with and without HIV infection, although the outcome seems to be worse for HIV-positive patients than their HIV-negative counterparts [3].

The result of HCV infection is, in the majority of cases, the development of liver cirrhosis. Once cirrhosis is established, the annual risk of HCC, liver disease progression, and death in HCV-infected patients reaches approximately 1-7%, 5%, and 2%, respectively [4]. HIV-HCV coinfected patients have a higher mean rate of fibrosis progression per year, translated into a shorter mean duration from HCV infection to cirrhosis, compared to HCV mono-infected patients [2]. Therefore, as described above, coinfected patients have been shown to develop liver cirrhosis more quickly than HCV-mono-infected individuals and demonstrate a more aggressive course of HCC [5], something that should have been mentioned in this study.

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# Authors' reply

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We would like to thank Dr Spartalis *et al* for their interest in our article [1]. It has been shown that human immunodeficiency virus and hepatitis C virus (HIV-HCV) coinfection is associated with shorter survival in patients with hepatocellular carcinoma (HCC) [2]. In addition, the presence of hepatitis B or C is associated with an increased risk of HCC in HIV patients [3]. We thus agree that HIV-HCV coinfection is associated with a worse prognosis in patients with HCC. However, since our cohort did not include any patients with HIV infection we were not able to study this group.

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