Conflict of interest

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Prophylaxis of bacterial infections in cirrhosis: Is an optimal 25-OH vitamin D level required?

To the Editor:

We read with interest the position statement based on the EASL special conference 2013 dealing with "Bacterial infections in cirrhosis" [1].

Infections in cirrhotic patients are a major problem, both in terms of the high frequency and also the relative high risk of associated mortality. Whilst there has already been significant progress, greater knowledge of the pathophysiology and improvements in the management of these patients are still crucial. Among the parameters associated with a risk of infection, those that can be readily addressed during management are of particular interest. Among them gastrointestinal bleeding, the severity of the liver insufficiency, low protein ascites and a previous episode of infection are clinical situations that may justify a primary or a secondary prophylaxis [1]. Randomized control trials, testing some of these strategies, are in progress (for example, the interest of norfloxacin in the primary prophylaxis against SBP in patients with ascites, NCT01037959).

We also wish to highlight another recently described risk factor that should be sought by hepatologists, vitamin D deficiency (<10 ng/ml). We have recently published data that demonstrate an association between severe deficiency in vitamin D and occurrence of bacterial infection in cirrhotic patients, independent of the severity of the liver insufficiency, assessed by the Child-Pugh or MELD score [2]. Whilst causality could not be tested in our prospective observational study, many other studies have also suggested that vitamin D could be implicated in the interactions between the host and bacteria. The anti-bacterial effects of vitamin D may be mediated, but not only through an increase in the innate immune system defence [3]. The potential link between infections and vitamin D deficiency has also been recently suggested in patients in resuscitation units [4].

Vitamin D deficiency is frequent in the general population and has been associated with increased mortality [5]. Prospective trials of supplementation of vitamin D with calcium in the elderly reduced osteoporotic fractures and mortality [6]. Cirrhotic patients also frequently exhibit a deficiency in vitamin D and are exposed to osteoporosis [7]. In order to increase bone health in patients with advanced liver disease, experts (including the European Association for the Study of the Liver guidelines for the management of patients suffering from

cholestatic liver diseases) suggest a balanced diet and a supplementation with calcium (1000–1500 mg/day) and vitamin D (400–800 IU/day), but little clinical data are available to support this [7,8].

Moreover, alcoholic cirrhotic patients with a severe deficiency in vitamin D (<10 ng/ml) have been suggested to have a higher risk of death [9]. Vitamin D supplementation in cirrhotic patients could be particularly beneficial in term of morbidity, quality of life and mortality.

In conclusion, we suggest that the potential association between vitamin D deficiency and infection in cirrhotic patients should be tested in independent large cohorts to confirm these preliminary data. If validated, a new strategy of supplementation of vitamin D in cirrhotic patients (particularly those with 25-OH vitamin D <10 ng/ml), both to reduce fracture risk and to reduce intercurrent infections, should be tested in randomized control trials.

Conflict of interest

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