



Letter to the Editor

## Statins, diabetes, obesity, nonalcoholic fatty liver disease, and hepatocellular carcinoma

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To the Editor:

We read with great interest the recent article by Chang et al. [1]. By analyzing the data of 1350 cirrhotic patients, the authors concluded that statin significantly decreases the risk of decompensation of cirrhosis, mortality and hepatocellular carcinoma (HCC) incidence, and these effects are dose dependent. Herein, we would like to comment as followings:

It is no doubt that statins decrease blood cholesterol levels effectively. However, many evidences indicate that statin use may also increase the risk of incident diabetes mellitus (DM) [2]. It is well recognized that DM is a potential risk factor of HCC [3], and it is difficult to determine the correlation between statin and HCC incidence. As shown in Table 1 in Chang's study, up to 73% of statin users had co-morbid DM, and this percentage is certainly higher than expected [4]. The authors should point out whether the patients with DM are statin-related or they already had DM before statin application. Moreover, the authors need to tell the readers if HCC incidence is significantly higher among patients with DM than those without DM. Is it possible to clarify that DM, not statin, is an independent risk factor of HCC through follow-up? Therefore, we recommend that a multivariate regression analysis be performed herein, so as to identify which is/are the real risk factor(s).

Additionally, as main indications of statin use, obesity, nonalcoholic fatty liver disease (NAFLD) and other metabolic factors should

also be analyzed. Considering that obesity and NAFLD have been recognized as risk factors of HCC incidence by several studies [3,5], these factors should also be analyzed. These analyses help clarify whether statin use is an independent or a confounding factor associated with HCC incidence.

In conclusion, clarification regarding above-mentioned issues would greatly enrich the results, even dramatically change the conclusion of Chang's study.

### References

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