Scientific research process

Title: Fibrosis in nonalcoholic fatty liver disease: Noninvasive assessment using CT volumetry

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1 What did this study explore?

The diagnostic performance of computed tomography (CT) volumetry for discriminating the fibrosis stage in patients with nonalcoholic fatty liver disease (NAFLD).

2 How did the authors perform all experiments?

On the basis of CT imaging, the volumes of total, left lateral segment, left medial segment, caudate lobe, and right lobe of the liver were calculated with a dedicated liver application.

3 How did the authors process all experimental data?

The relationship between the volume percentage of each area and fibrosis stage was analyzed using Spearman's rank correlation coefficient. A receiver operating characteristic (ROC) curve analysis was performed to determine the accuracy of CT volumetry for discriminating fibrosis stage.

4 How did the authors deal with the pre-study hypothesis?

We hypothesized that it would be clinically useful to be able to use CT volumetry to elucidate this morphological change and to predict the fibrosis stage in NAFLD noninvasively. We concluded that the volume percentage of the caudate lobe calculated by CT volumetry is a useful diagnostic parameter for staging fibrosis in NAFLD patients.

5 What are the novel findings of this study?

The volume percentages of the left lateral segment and the caudate lobe calculated by CT volumetry were significantly increased and that of the right lobe was significantly decreased with the increase in fibrosis stage in NAFLD. The volume percentage of the caudate lobe is a useful diagnostic parameter for staging fibrosis in patients with NAFLD. The evaluation of liver volume using CT volumetry is useful for predicting the fibrosis stage in NAFLD.