Progression of liver disease in non-alcoholic fatty liver disease: A prospective clinicopathological follow-up study

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OBJECTIVE: To perform a follow-up study on non-alcoholic fatty liver disease (NAFLD) patients in our previous study using paired liver biopsy.

METHODS: Patients who were included in our previous study on NAFLD and agreed to receive a repeat liver biopsy were included in the study. Their clinical characteristics, laboratory examination results and histological analysis on the repeat liver biopsied specimens were prospectively collected and compared with those in the previous study.

RESULTS: Data from 35 patients (mean age 47.5 ± 10.9 years, male 40.0%) were analyzed. The mean interval between the liver biopsies was 6.4 ± 0.8 years. NAFLD activity score (NAS) worsened in 13, remained unchanged in 9 and ameliorated in 13. Fibrosis worsened in 18 and remained unchanged in 17. Two patients who were confirmed with cirrhosis at baseline developed decompensated cirrhosis. On multivariate analysis, elevated serum aspartate aminotransferase (AST) (odds ratio [OR] 10.74, 95% confidence interval [CI] 1.00–115.86, $P = 0.050$) and γ-glutamyl transpeptidase (γ-GT) (OR 16.10, 95% CI 1.30–198.90, $P = 0.030$) at follow-up were associated with worsened NAS. Patients with borderline NASH at baseline were more likely to have worsened NAS at follow-up than those with definite NASH (OR 12.67, 95% CI 2.29–70.02, $P = 0.004$). However, both groups had a similar likelihood of having worsened fibrosis at follow-up. No plausible factors were found to be associated with worsened fibrosis.

CONCLUSIONS: NAFLD patients with persistently elevated serum AST and γ-GT levels during follow-up should be suspected of having worsened NAS. NASH patients can have significant disease progression over a relatively short period of time and fibrosis might be irreversible without specific interventions.

KEY WORDS: disease progression, histology, NAFLD, NASH, non-alcoholic fatty liver disease, non-alcoholic steatohepatitis.

INTRODUCTION

The prevalence of non-alcoholic fatty liver disease (NAFLD) has rapidly increased over the decades and the disease is estimated to affect up to 30% of the general population in the Asia-Pacific region. In Malaysia Goh et al. reported a prevalence of NAFLD of 22.7% based on a group of suburban individuals who attended health check. We found that the prevalence of NAFLD (49.6%) among patients with