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PROGRESSION OF NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD) –
A PROSPECTIVE CLINICOPATHOLOGICAL FOLLOW-UP STUDY

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Objective
To elucidate the natural history of NAFLD patients and to determine factors associated with disease progression utilizing paired liver biopsy.

Methodology
Seventy-five NAFLD patients with liver biopsy in an earlier study were contacted. Patients who agreed for repeat liver biopsy were included. Factors associated with worsened NAFLD activity score (NAS) and overall histology were determined.

Results
Data for 35 patients were analyzed (mean age 47.5 years old, male 40.0 %). At baseline, 2.9 %, 31.4 % and 65.7 % had simple steatosis, probable NASH and NASH, respectively. Mean interval between biopsies was 6.4 ± 0.8 years. NAS worsened in 13, remained unchanged in 9 and improved in 13. Fibrosis worsened in 18 and remained unchanged in 17. Two developed cirrhosis. None had improvement in fibrosis. Overall histology worsened in 23, remained unchanged in 6 and improved in 6. Elevated serum ALT (OR = 7.39, 95 % CI = 1.44 – 37.8; p = 0.016), AST (OR = 14.29, 95 % CI = 1.52 – 77.54, p = 0.002) and GGT (OR = 25.71, 95 % CI = 2.7 – 238.79, p = 0.004) during follow-up were significantly associated with worsened NAS. Elevated serum GGT (OR = 8.86, 95 % CI = 1.41 – 33.29, p = 0.017) during follow-up was significantly associated with worsened overall histology. Two of six patients diagnosed with cirrhosis in the earlier study decompensated. Three patients from the earlier study died of myocardial infarction, colorectal carcinoma and hepatocellular carcinoma, respectively.

Conclusions
A substantial proportion of NASH patients undergo significant progression over short period of time. Fibrosis is irreversible without specific interventions. NAFLD patients with persistently elevated serum liver enzymes should be suspected of having progressive disease.