

The Prevalence of Elevated Alanine Transferase (ALT) may be Overestimated in People with Diabetes Mellitus

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Results: Epidemiologically, elevated ALT is a marker of NAFLD. The prevalence of elevated ALT in unselected diabetic populations is unknown. Normal fluctuations in ALT levels underestimate the prevalence in NAFLD if a single measurement is used. We measured the prevalence of elevated ALT in Type 1 (T1DM) and 2 diabetics (T2DM) by two estimations, a year apart.

All patients attending the University Hospital diabetes clinic were included. HbA1c, lipid and liver profiles were measured. These measurements were taken in Sep-Dec '05 and again in Sep-Dec '06.

910 diabetics were studied. Liver profiles were available for 908 (M:F 532:376). They aged from 17-95 yrs (mean 56.7). 464 (51.1%) had T2DM. 118 patients had an elevated ALT, representing 15.3% of those with T2DM and 10.5% with T1DM. Overall the prevalence of elevated ALT was 13%. 12 months later 48 (40.7%) of the original 118 patients were found to have normal ALT. T2DM accounted for 33 of the 48 patients who normalized their ALT. Comparative data for these 48 are shown:

Prevalence of elevated ALT in T1DM (10.5%) and T2DM (15.3%) was higher than the 8.9% expected in the general population. However more than 40% of the diabetic patients with initially raised ALT had normalized a year later. Hence prevalence of raised ALT in diabetic patients was 7.7%. Thus point prevalence may overestimate the prevalence of elevated ALT. Within the diabetes population an improvement in HbA1c and lipid profile may lead to an improvement in ALT levels. A similar prevalence of elevated ALT in the diabetes and general population is surprising in view of the compelling evidence that links diabetes and liver disease. This may be because ALT is not a sensitive marker of liver disease or alternatively that NAFLD is much more likely to progress to NASH/cirrhosis in people with diabetes.