Capsule Commentary on Peltz-Sinvani et al., Low ALT Levels Independently Associated with 22-Year All-Cause Mortality among Coronary Heart Disease Patients

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Low ALT has been associated with frailty and mortality in other populations. In this study, Peltz-Sinvani et al.¹ assessed the association between low ALT (<17 IU/L) blood levels and long-term (22.8 years) all-cause mortality in patients with stable coronary heart disease. The authors used the Bezafibrate Infarction Prevention (BIP) registry population, which contains over 15,000 patients 40 to 74 years of age with stable coronary heart disease who have been followed continuously for over two decades.² In their analysis they excluded patients with elevated ALTs.

The authors found that the cumulative probability of all-cause mortality was significantly higher in patients with low ALT than in patients with higher ALT levels (65.6 % vs. 58.4 %, log-rank $p < 0.001$). Furthermore, multivariate analysis adjusted for multiple established predictors of mortality demonstrated that low ALT is independently associated with an 11 % greater long-term mortality risk (HR 1.11 [95 % confidence interval: 1.03-1.19; adjusted $P < 0.01$]). Peltz-Sinvani concluded that low ALT levels are associated with increased long-term mortality amongst middle-aged patients with stable coronary heart disease, even after adjusting for other, well-established risk factors for mortality.

The reported associations may have been confounded by several factors. First, the study was conducted as a retrospective analysis and thus could not account for potential bias or confounders from the BIP registry population. Second, while

Peltz-Sinvani et al. do identify the study population as patients without liver disease and with stable coronary heart disease, they do not comment on other comorbidities that patients may have had, which may or not be associated with abnormal ALT levels. Lastly, older age, female sex, lower BMI, and lower height are all independent predictors of low ALT and may possess their own intrinsic factors that affect long-term mortality.

The ability to assess long-term mortality, particularly in an aging population, is important in treatment planning for both early and advanced disease. Peltz-Sinvani et al.'s findings suggest that ALT blood levels may be helpful in risk stratification of patients with stable coronary heart disease. However, additional studies are needed to explain the association, and the appropriate intervention must be elucidated.

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Compliance with ethical standards:

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