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TITLE: Development of an algorithm for the prediction of cardiovascular events in patients with NAFLD: the role of mean platelet volume

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ABSTRACT BODY:

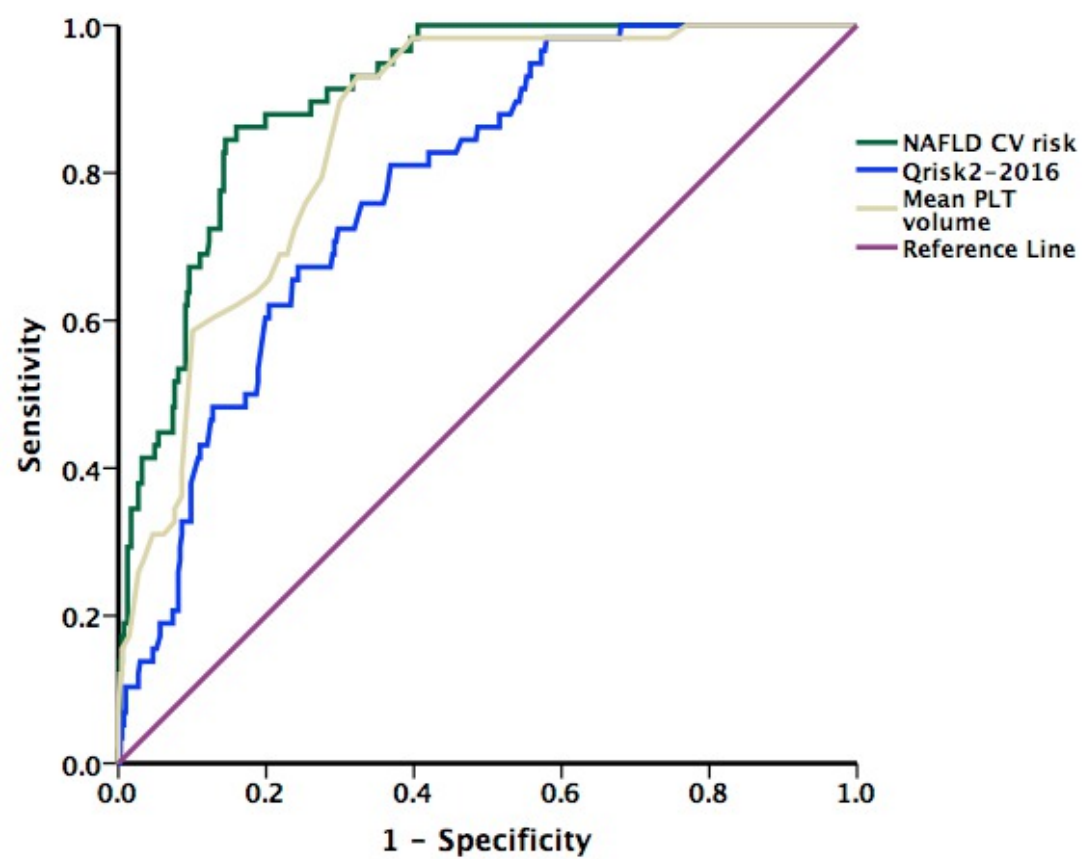
Abstract Body: Background: Cardiovascular disease (CVD) is the leading cause of death in patients with NAFLD. Current algorithms assessing cardiovascular risk (i.e. QRISK2) do not take account of the condition. Mean platelet volume (MPV) - a marker of platelet size/reactivity – is elevated in NAFLD with advanced fibrosis and/or NASH, and in thrombotic disease. It is unknown whether MPV could improve CVD risk prediction in NAFLD.

Methods: We performed a retrospective (1/2008-1/2015, 356 patients) and prospective validation (1/2015- 5/2016, 111 patients), enrolling all consecutive patients with biopsy-proven NAFLD at our unit. MPV was recorded one year prior to CV events (myocardial infarction, angina, coronary heart disease, and stroke/transient ischaemic attack); QRISK2-2016 was also calculated at the same time point. We have also recently developed automated software, using low-resolution images, to quantitate steatosis in NAFLD.

Results: There were 45 CV events in the retrospective group, and 13 in the validation arm. Univariately, MPV predicted CV events ($p=0.001$, $OR=3.2$, $95\%CI=2.3-4.6$). Binary logistic regression was used to generate a formula for predicting CV events within one year, including factors significant in univariate analysis: $NAFLD\ CV-risk = 1.053\ln(age) + 2.96\ln(smoking) + 3.159\ln(MPV) + 1.42\ln(diabetes\ mellitus) + 2.6\ (if\ Filipino) + 0.36\ (other\ Asians) + 0.93\ (Caucasian\ or\ Pakistani) + 2.1\ (Arab) + 1.2\ (Hispanic/Latino) + 0.82\ (Black) + 1.6\ (fat\% \ if\ known) + 2.34$. AUROCs for the prediction of CV events in the validation cohort were: for QRISK2 0.78 ($p=0.001$, $95\%CI=0.73-0.84$), for MPV 0.85 ($p=0.001$, $95\%CI=0.81-0.89$), and for NASH-CV risk 0.090 ($p=0.001$, $95\%CI=0.87-0.94$) (Figure 1).

Conclusions: Our new algorithm for the prediction of CV events within one year in a NAFLD population performs better than conventional ones. Elevated MPV levels predict CV events.

(no table selected)



Co-Author Disclosure Status

The following authors have completed their AASLD 2017 disclosure: Benjamin Mullish: Disclosure completed | Roberta Forlano: Disclosure completed | Michael Yee: Disclosure completed | Nikos Giannakeas: Disclosure completed | Robert Goldin: Disclosure completed | Simon Taylor-Robinson: Disclosure completed | Shahid Khan: Disclosure completed | Mark Thursz: Disclosure completed | Pinelopi Manousou: Disclosure completed