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Article type : Correspondence

Comparison of risk scores in the PSC arena

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Primary sclerosing cholangitis (PSC) is a rare liver disease with high clinical burden and significant heterogeneity in outcome. The UK-PSC risk scores(1), based upon a national observational cohort study of >1000 patients from across the UK, provide a robust evaluation of PSC risk for individual patients based on clinical predictors of outcome.

In recognition of the fact that early and late risk may be driven by different covariates, we applied a novel approach and have thus built stronger predictive models (defined as a c-statistic >0.8) for both short- and long-term PSC risk. Additionally, we have validated our models in separate national and internationally-derived cohorts.

Importantly, we provide a simple means of interpreting the UK-PSC risk score with low- and high-risk groups. Furthermore, we directly compare its predictive power with two well-established risk scores; the Mayo score and AST-to-platelet ratio index (APRI), in the same external validation cohort, establishing superior predictive value of the UK-PSC risk scores. Our work thus addresses some of the challenges raised by patients as priority areas for research.

We appreciate Dr Wang and colleagues for their correspondence. As noted by Wang et al. our manuscript makes comment on the recently reported c-statistic (c=0.68) of the Amsterdam-Oxford model (AOM)(2) in the introduction to our paper, but at no point do we draw direct comparison with it.

With general agreement that strong models have a reported c-statistic >0.8, we read with interest that the AOM could have been improved (with higher c-statistic) if they had chosen to create a short- and long-term models as was reported in our manuscript. In this, they further support an argument that future PSC risk models may better serve the clinical and patient community if they recognise different periods of risk, as per the UK-PSC model.

It has been encouraging for both patients and clinicians that in recent years, several PSC risk prediction tools have been published, and it will take time for these to be evaluated and interrogated. The AOM score has been recently validated(3), and over time we look forward to the UK-PSC score being similarly tested. It was beyond the scope of our manuscript to compare and externally validate every existing PSC risk score.

We remain encouraged by the interest in our work, and the field's commitment to work together to overcome the challenges patients with PSC face. We are therefore pleased by ongoing efforts for a meta-analysis of existing datasets including our data as well as, amongst others, the Amsterdam team's data, This, we believe, will most effectively help patients and clinicians navigate a difficult and challenging disease.

1. Goode EC et al. Factors Associated With Outcomes of Patients With Primary Sclerosing Cholangitis and Development and Validation of a Risk Scoring System. Hepatology 2019;69:2120-2135.

2. de Vries EM, Wang J et al. A novel prognostic model for transplant-free survival in primary sclerosing cholangitis. Gut 2018;67:1864-1869.

3. Goet JC et al, Validation, Clinical Utility and Limitations of the Amsterdam-Oxford Model for Primary Sclerosing Cholangitis. J Hepatol. 2019. doi: 10.1016/j.jhep.2019.06.012.