mechanisms behind the indications for C-section in women with IBD. We agree that a multidisciplinary approach, involving patients, gastroenterologists and obstetricians, is required in order to reduce the risk of adverse maternal-related outcomes in women with IBD.[6]

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LINKED CONTENT

This article is linked to Tandon et al and Selinger papers. To view these articles, visit https://doi.org/10.1111/apt.15587 and https://doi.org/10.1111/apt.15649.

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REFERENCES

1. Selinger CP. Letter: increased risk of caesarean section for women with IBD - more questions than answers. *Aliment Pharmacol Ther*. 2020;51:667-668.
2. Tandon P, Govardhanam V, Leung K, et al. Systematic review with meta- analysis: risk of adverse pregnancy-related outcomes in inflammatory bowel disease. *Aliment Pharmacol Ther*. 2020;51:320-333.
3. Burke KE, Haviland MJ, Hacker MR, Shainker SA, Cheifetz AS. Indications for mode of delivery in pregnant women with inflammatory bowel disease. *Inflamm Bowel Dis*. 2017;23:721-726.
4. Sharaf AA, Nguyen GC. Predictors of cesarean delivery in pregnant women with inflammatory bowel disease. *J Can Assoc Gastroenterol*. 2018;1:76-81.
5. Ananthakrishnan AN, Cheng A, Cagan A, et al. Mode of childbirth and long-term outcomes in women with inflammatory bowel diseases. *Dig Dis Sci*. 2015;60:471-477.
6. Nguyen GC, Seow CH, Maxwell C, et al. The toronto consensus statements for the management of inflammatory bowel disease in pregnancy. *Gastroenterology*. 2016;150:734-757.

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Letter: a stepwise approach towards the screening of hepatic fibrosis in the general population

EDITORS,

We read with interest the recent article by Kang et al[1] who used magnetic resonance elastography (MRE) to examine the prevalence of hepatic fibrosis in a large community-based general population (n = 2170) from South Korea. The rates of significant (≥F2) and advanced (≥F3) fibrosis in the entire study cohort were 5.1% and 1.3% respectively. In the average risk population (ie after excluding alcohol use and viral hepatitis), MRE-defined (>5% fat fraction) non-alcoholic fatty liver disease (NAFLD) was identified in 27.7% of the screened subjects—with significant and advanced fibrosis being detected in 8.0% and 1.5% of cases respectively. Importantly, subjects with NAFLD plus diabetes had a significantly higher prevalence of significant and advanced fibrosis (24.1% and 6.0% respectively). The authors are to be congratulated for implementing the use of MRE—a highly accurate imaging modality—in a screening setting. Their results confirm previous findings on non-negligible rates of fibrosis and NAFLD in the general population.[2,3] Unfortunately, the routine use of MRE for screening of fibrosis in the general population is unfeasible because this technique is not widely available and weighed by high costs.

We believe that routine screening for hepatic fibrosis in a population setting should be developed in a stepwise fashion using clear-cut decision nodes. A rational model may be as follows. First, all subjects should undergo non-invasive fibrosis tests (NITs), for example, FIB-4 testing.[4] This should be implemented in an unbiased, large-scale manner in primary care settings and in secondary-care nonhepatology settings (eg, obesity or diabetic clinics), with the goal of detecting the "missing cases" of liver fibrosis that will never have the opportunity to be referred to the hepatologist if NITs screening is not systematically brought outside of the specialist liver centers. Subjects at low risk of advanced fibrosis according to FIB-4 should be managed in primary care, whereas those at high risk should be directly referred to secondary care. Patients at indeterminate risk according to FIB-4 should undergo transient elastography (TE) and be reclassified according to its results. Of note, this triage implementation outside of the hepatology clinic is expected to increase the number of referrals to the hepatologist—ultimately reducing the number of cases that stand under-recognised in a non-specialist setting. Moreover, the "out-of-the-hepatology-clinic" NITs implementation would also reduce the selection bias currently seen in most hepatology practices—in which NAFLD cohorts are substantially enriched with the most severe cases of fibrosis (a condition that does not reflect the reality of NAFLD in the general population and creates a bias that can also influence the

outcomes of phase 3 clinical trials).[5] Finally, all cases with metabolic syndrome and results of TE suggestive of significant fibrosis may be candidates to undergo biopsy in the hepatology clinic.

The application of this multiple-step screening approach to fibrosis has the potential to lead to a new stepwise model of care, especially if correctly implemented in the appropriate setting, that is, non-hepatology practices in first instance, followed by specialist hepatology clinics.

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REFERENCES

1. Kang KA, Jun DW, Kim MS, Kwon HJ, Nguyen MH. Prevalence of significant hepatic fibrosis using magnetic resonance elastography in a health check-up clinic population. *Aliment Pharmacol Ther*. 2020;51:388-396.
2. Ginès P, Graupera I, Lammert F, et al. Screening for liver fibrosis in the general population: a call for action. *Lancet Gastroenterol Hepatol*. 2016;1:256-260.
3. Kaya E, Demir D, Alahdab YO, Yilmaz Y. Prevalence of hepatic steatosis in apparently healthy medical students: a transient elastography study on the basis of a controlled attenuation parameter. *Eur J Gastroenterol Hepatol*. 2016;28:1264-1267.
4. Jafarov F, Kaya E, Bakir A, Eren F, Yilmaz Y. The diagnostic utility of fibrosis-4 or nonalcoholic fatty liver disease fibrosis score combined with liver stiffness measurement by fibroscan in assessment of advanced liver fibrosis: a biopsy-proven nonalcoholic fatty liver disease study. *Eur J Gastroenterol Hepatol*. 2019. https://doi.org/10.1097/MEG.0000000000001573
5. Francque S, Vonghia L. Pharmacological treatment for non-alcoholic fatty liver disease. *Adv Ther*. 2019;36:1052-1074.

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Letter: a stepwise approach towards the screening of hepatic fibrosis in the general population—authors' reply

EDITORS,

It was a pleasure to read Dr Yilmaz's review of our paper[1] and his suggestion of a method for broadening the screening and diagnosis rate of NAFLD using a stepwise approach.[2] We agree that using non-invasive tests as the first step in screening for NAFLD is important especially in areas that have limited resources.

However, one of the most important points of our paper is that we provided a baseline, highly accurate number of patients who have fatty liver and fatty liver-related fibrosis which can be used as a comparison for global practice.[1] As we noted, almost 28% of a generally healthy population had NAFLD and of those with NAFLD 8% had fibrosis (F2) while 1.5% had F3 fibrosis. In addition, we found that those with diabetes also had a high prevalence of fibrosis [12.5% (F2) and 4.3% (F3)] with those having NAFLD and diabetes had the highest prevalence of fibrosis [24.1% (F2) and 6.0% (F3)]. Furthermore, we found that the kappa coefficient for agreement between the use of ultrasound and MRE was only 0.38. As such, using our results as a baseline, practices can compare their number of NAFLD cases, NAFLD plus diabetes mellitus (a condition that places patients at five times the risk for fibrosis), NAFLD-related fibrosis cases and diabetes mellitus-related fibrosis to our results to determine how well they are doing at case finding as the prevalence of NAFLD is high in Asia.[1,3]

Additionally, we were able to determine among this large general, average-risk population (excluding current and past viral hepatitis, significant alcohol use, and those with high ALT values), the mean ± SD for a 'normal' liver stiffness value when using MRE (2.4 ± 0.3 kPa), a critical value that has been hindered by small sample sizes or the use of highly selected populations.[4-7] This finding may now help assist policy decision makers determine an accurate cut-off point to determine normal liver stiffness.

In addition, it is important to realise that for any screening algorithm to be effective, healthcare practitioners must first be aware of