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Reply to: "Challenges associated with the roll-out of HCC surveillance in sub-Saharan Africa – the case of Uganda"

To the Editor:

We read with great interest the letter from Dr. Van Hees and colleagues describing the current status and challenges of hepatocellular carcinoma (HCC) surveillance in resource-limited areas, including parts of sub-Saharan Africa.[1] We commend our colleagues for initiating these important efforts, particularly given the continued high burden of HCC in these areas.

In their survey of HCC surveillance capacity in Ugandan institutions, the authors found each had ultrasound availability, with most having multiple ultrasound machines and trained personnel. Although this availability provides a foundation for HCC surveillance programs, data from the Western world have highlighted that this is essential but not sufficient, with continued underuse of surveillance in clinical practice.[2] In addition to providers reporting competing clinical concerns, patient-reported barriers such as transportation and costs are associated with lower surveillance receipt.[3] These patient- and provider-level barriers may be even more prevalent in resource-limited countries and would need to be aggressively addressed. Interventions such as reminder systems for providers and population health strategies for patients can significantly increase HCC surveillance receipt but have not been evaluated in routine clinical practice or resource-limited settings.[2] Although advances in surveillance biomarkers offer promise for improved effectiveness of early detection efforts, studies will be needed to assess their effectiveness in areas such as sub-Saharan Africa as only 2 of the 5 centers had consistent access to AFP testing.

Surveillance fits in a larger screening context and mortality reduction is dependent on timely follow-up of abnormal screening results and treatment of detected HCC lesions. A large study encompassing 1,315 patients from 8 African countries excluding Egypt demonstrated less than 3% of patients received any HCC specific treatment,[4] regardless of their eligibility for curative procedures. This finding reflects that implementation of HCC surveillance programs in sub-Saharan Africa will not be successful if not conducted in parallel with improvement in access to HCC treatment. Challenges to HCC treatment in this region include a shortage of dedicated physicians as well as training programs to develop specific skills such as liver surgery or interventional radiology.[5] Weak healthcare infrastructure and inadequate supplies also strongly limit the implementation of sophisticated technological platforms, which are mandatory to achieve complex curative procedures such as surgical resection or percutaneous ablation.[6] Nevertheless, the development of national cancer programs defining new frameworks of cancer care have been shown to be feasible and effective in some sub-Saharan African countries such as Rwanda.[7] Hopefully, as reported by Van Hees *et al.*,[1] Uganda is following the same path by integrating both improvement of early HCC detection and increased access to care delivery: indeed, 1 out of 5 facilities specialized in HCC management is able to provide liver resection, which is key to translating recent surveillance efforts into a survival benefit. Moreover, the substantial number of personnel dedicated to ultrasound exploration in 3 out of 5 centers could also foretell the development of expertise in percutaneous approaches aimed at broadening the spectrum of curative options in the future.

Finally, continued emphasis should also be placed on HCC prevention efforts, as this is the most cost-effective means of reducing HCC-related mortality. Given chronic HBV accounts for most HCC cases in Africa, the role of HBV vaccination and anti-HBV treatment programs cannot be overstated. Data from Taiwan demonstrate the effectiveness of HBV vaccination programs to significantly reduce HCC incidence, but this simple measure continues to be underused in many African countries.[8] Similarly, long-term administration of potent nucleos(t)ide analogues such as entecavir and tenofovir improves survival by preventing the progression to cirrhosis, improving portal hypertension and reducing by approximately 50% the risk of HCC, compared to untreated individuals.[9] Traditional barriers such as costs are increasingly being addressed, as anti-HBV medicines are now available at affordable prices, as are standard diagnostics for treatment monitoring. These data highlight the need to implement anti-HBV therapy in countries where the toll of HBV-related deaths is very high. As the natural history of HBV in Africa differs from that reported in other areas including Europe, treatment eligibility criteria should be expanded and simplified. New treatment strategies aimed to deliver functional cure, *i.e.* HBsAg loss, by a finite treatment course might further scale up

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treatment acceptance and effectiveness in difficult to treat patients such as those living in Africa.

In summary, we were excited to hear from Dr. Van Hees and colleagues regarding their efforts to survey and increase HCC surveillance in Uganda. We hope their data and subsequent interventions delivered across the screening continuum from prevention to surveillance and treatment will help significantly reduce HCC-related mortality across Africa.

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Conflicts of interest

Amit G. Singal has served on advisory boards and/or consultant for Bayer, Eisai, Genentech, Exelixis, Bristol Meyers Squibb, AstraZeneca, Wako Diagnostics, Glycotest, Exact Sciences, Roche, and TARGET Pharmasolutions. He has received research funding from Gilead. Pietro Lampertico has served on advisory boards, consultant, or speakers bureau for BMS, Roche, Gilead, GSK, Abbvie, MSD, Arrowhead, Alnylam, Janssen, Spring Bank, MYR, Eiger, and Alfasigma. Pierre Nahon has received honoraria from and/or consults for Abbvie, Astra-Zeneca, Bayer, Bristol-Myers Squibb, Gilead, Ipsen and MSD. He received research grants from Abbvie and Bristol-Myers Squibb.

Please refer to the accompanying ICMJE disclosure forms for further details.

Authors' contributions

Amit Singal – drafting manuscript, critical revision of manuscript. Pietro Lampertico – drafting manuscript, critical revision of manuscript. Pierre Nahon – drafting manuscript, critical revision of manuscript.

Supplementary data

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