

Treatment of hepatocellular cancer in sub-Saharan Africa: balancing ideals, realities and challenges

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This issue of the journal contains the first report on the outcome of liver transplantation for hepatocellular cancer (HCC) in sub-Saharan Africa (SSA) from the Wits Donald Gordon Medical Centre.¹ The few previous reports from the African continent on transplantation for HCC have been from Egypt. While the authors are to be commended on their results, the fate of the vast majority of patients presenting with HCC in Africa remains dismal. A critical evaluation of the current situation and important future initiatives to improve outcome of patients diagnosed with HCC in SSA are warranted.

Sub-Saharan Africa, together with eastern Asia, accounts for 80% of newly diagnosed HCCs, with regional incidences in SSA populations of up to 100 per 100 000 that exceed those reported in China and other high-prevalence countries.² HCC in SSA is characterised by several distinguishing features. Chronic hepatitis B virus (HBV) infection and aflatoxin exposure are the major aetiological factors. There is a marked male predominance with a male:female ratio of 8:1 compared to 2.5:1 in non-African populations and a younger age of onset (mean age range 33–47 years in African compared to 60–80 years in non-African populations). In addition, in African cohorts there are more frequent presentations with tumour-related symptoms and accelerated growth patterns than in non-African populations.²

Compared to patients in developed countries where around 40% of HCCs are diagnosed with very early, early or intermediate stage disease in which curative interventions or transarterial therapy can be considered, 95% of SSA patients present with advanced or terminal disease.^{3,4} Disease stage directly impacts on patient treatment. In developed countries, targets of 30–40% have been set for the proportion of HCC patients who should receive interventions with curative intent, with an expected 5-year overall survival rate of about 70%.⁵ In stark contrast is the abysmally small fraction of patients in SSA who present with potentially curable disease and are treated. In a retrospective observational cohort study that included data from eight SSA countries, a mere 0.6% of patients diagnosed with HCC underwent treatment with curative intent.³ In a HCC cohort of 206 patients presenting to a major referral hospital in Ghana, less than 8% were assessed

as candidates for treatment with curative intent, none of whom were treated.⁶

Due to the wide disparity in available resources in SSA between as well as within countries, developing HCC management strategies will be best served by applying resource-sensitive guidelines that propose escalating levels of preventative measures tailored to available treatment options.⁷ Screening and surveillance are only indicated in medium and high resource environments where early lesions that are detected can be treated appropriately. Despite the clinical benefit of screening and surveillance being controversial due to the lack of sufficient data supporting its effectiveness in reducing cancer mortality, nationwide screening of high-risk populations is common practice in most developed countries.⁸ The low impact of screening in these programs can be explained by a relatively low prevalence of HCC in the populations screened and good and accessible health systems that promote early diagnosis, in particular in patients with prior diagnosed risk factors, such as cirrhosis and metabolic syndrome. In SSA the yield of screening and surveillance is likely to be higher for a number of reasons, creating the potential to achieve a more favourable cost-benefit ratio. Firstly, screening will be performed in well defined high-risk populations with mostly asymptomatic risk factors, in particular chronic HBV infection. Secondly, with 95% of patients currently diagnosed with disease beyond cure in suboptimal environments where access to healthcare is limited, the scope for earlier detection of lesions is substantial.

Advocacy, public awareness campaigns and incentives by organisations such as the Gastroenterology and Hepatology Association of SSA (GHASSA), the European Association for the Study of the Liver (EASL) and European-African and International Hepatopancreatobiliary associations (E-AHPBA and IHPBA) have enhanced the prominence of the SSA HCC agenda on the international stage. Central to endeavours to improve the situation is an extensive screening and surveillance initiative that will be based on guidance specifically adapted to SSA needs. Rapidly developing telemedicine technologies, allowing tele-guidance and tele-mentoring facilitate these developments which involve well

orchestrated networks, such as the Extension for Community Healthcare Outcomes (ECHO™) venture.⁹

The anticipated yield of screening and surveillance in SSA will put pressure on existing diagnostic and surgical infrastructure which is currently inadequate in all SSA countries. This is unequivocally demonstrated by the findings of the Lancet commission on Global Surgery that identified Eastern, Western and Central SSA as the three regions in the world with the greatest unmet needs in surgical care services.¹⁰ It is crucial to emphasize that the level of available treatment dictates the appropriateness of preventative measures. Screening and surveillance will require at least medium and preferably high resources to be meaningful. The necessary escalation of existing low resource centres to higher levels will require substantial investment in infrastructure and human resources.

HCC is the most common cause of cancer-related death in men and the 3rd most common in women in SSA. Official National Cancer Registry cancer statistics grossly underestimate the incidence of HCC in South Africa, as they are based on histology, placing liver and bile duct tumours as the 26th most common cancers in South Africa. Only 6% of liver transplants in Johannesburg were performed for HCC, compared to 14% in low incidence European countries and up to 50% in high incidence Asian countries.^{11,12} Even though South Africa is in the fortunate position that all curative-intended treatment options are available to patients with HCC, resources are inadequate for current needs. With treatment capacity in most SSA countries still at a minimal resource level, a first step will be to upscale to a medium resource level which includes ablation and resection. As we enter an era of renewed efforts to improve the fate of HCC patients in SSA, the challenge in meeting the expected increase in surgical demand will be to reconcile utopian ideals with practical realities.

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