

## Surgical resection vs radiofrequency ablation in older adults with early stage hepatocellular carcinoma: Where do we stand?

The prevalence of hepatocellular carcinoma (HCC) has increased significantly over the last few decades and it is the third cause of cancer-related mortality worldwide.<sup>[1,2]</sup> Several published guidelines on the management of HCC have indicated that liver transplantation, surgical resection (SR), and local regional therapy such as radiofrequency ablation (RFA) are the treatment options for early stage HCC.<sup>[2,3]</sup> Although liver transplantation is the best curative option for HCC patients, it may not be feasible due to organ shortages, unacceptable surgical risk due to advanced patient's age or comorbidities, and high cost; RFA has therefore been widely used in clinical practice for the management of HCC. RFA has the advantage of being minimal invasive with low peri- and post-procedural risk especially among elderly patients.<sup>[2,3]</sup> However, SR may provide a greater long-term survival benefit compared to RFA among HCC patients.<sup>[4]</sup>

We have read with great interest the recent publication by Yu in which a comparison of survival benefits was performed between elderly patients ( $\geq 65$  years) with a single HCC  $\leq 5$  cm who underwent SR vs those who underwent RFA.<sup>[5]</sup> A propensity scoring matching analysis was performed in a large population-based database to evaluate their two main outcomes, overall survival (OS) and liver-cancer-specific survival (LCSS). A total of 461 patients had SR compared to 575 patients who had RFA. However, after matching, 259 SR patients and 259 RFA patients were analyzed. The median follow-up time was 40 months in the SR group compared to 32 months in the RFA group.<sup>[5]</sup>

The OS was significantly better in the SR group compared to the RFA group. The 1-, 3-, and 5-year OS rates were 88%, 68%, and 54% for the SR group compared to 84%, 53%, and 32% for the RFA group, respectively ( $P < 0.002$ ). In addition, LCSS was significantly better in the SR group compared to the RFA group. The 1-, 3-, and 5-year LCSS rates were 90.5%, 75.4%, and 63.7% for the SR group compared to 88.2%, 61.7%, and 43.5% for the RFA group, respectively ( $P < 0.001$ ). Likewise, the RFA group was associated with lower OS [hazard ratio (HR) = 1.595,  $P < 0.001$ ] and LCSS (HR = 1.69,  $P < 0.001$ ) compared to the SR group.<sup>[5]</sup> However, in subgroup analysis

based on patient's age and tumor size, OS and LCSS were not significantly different between the two groups (RFA vs SR) in patients who were  $>75$  years and had tumor measuring  $<3$  cm.<sup>[5]</sup>

SR has the advantage over RFA by tumor removal with clean resection margin. Therefore, it would be expected that HCC recurrence would be lower in the SR group compared to the RFA group. On the other hand, adverse events are likely to be higher in the SR group compared to the RFA. However, these results were not mentioned in the study. In addition, time to tumor recurrence should be explored in detail to differentiate between early HCC recurrence due to treatment failure from late tumor recurrence due to carcinogenic liver. Likewise, pre-treatment liver histopathology was available in  $<30\%$  of the population. Staging liver disease may have an implication on treatment decision especially among cirrhotic patients introducing possible selection bias.

Despite the study limitations which include study design, missing data such as the Child-Pugh score, performance status, patients' comorbidities, tumor characteristics, and location, it has a reasonable sample size and is consistent with what has been published in the literature regarding the safety and efficacy of RFA and SR group in elderly HCC patients.<sup>[4,6]</sup> However, more high-quality studies are required to validate the result. Yet, research such as this helps to inform multidisciplinary patient-centered decision making to personalize treatment based on liver dysfunction, tumor size, tumor number, comorbidities, and performance status.

Bandar Al-Judaibi, M Katherine Dokus

Division of Transplantation, University of Rochester, Rochester, New York, United States of America

**Address for correspondence:** Dr. Bandar Al-Judaibi, Division of Transplantation, University of Rochester, Rochester, New York, United States of America.

E-mail: bandaraljudaibi@icloud.com

### REFERENCES

1. El-Serag HB, Kanwal F. Epidemiology of hepatocellular carcinoma in the United States: Where are we? Where do we go? *Hepatology* 2014;60:1767-75.

2. Galle PR, Forner A, Llovet JM, Mazzaferro V, Piscaglia F, Raoul JL, *et al.* EASL clinical practice guidelines: Management of hepatocellular carcinoma. *J Hepatol* 2018;69:182-236.
3. Marrero JA, Kulik LM, Sirlin CB, Zhu AX, Finn RS, Abecassis MM, *et al.* Diagnosis, staging, and management of hepatocellular carcinoma: 2018 Practice guidance by the American association for the study of liver diseases. *Hepatology* 2018;68:723-50.
4. Bauschke A, Altendorf-Hofmann A, Mothes H, Rauchfuss F, Settmacher U. Partial liver resection results in a significantly better long-term survival than locally ablative procedures even in elderly patients. *J Cancer Res Clin Oncol* 2016;142:1099-108.
5. Yu B, Ding Y, Liao X, Wang C, Wang B, Chen X. Radiofrequency ablation versus surgical resection in elderly patients with early-stage hepatocellular carcinoma in the era of organ shortage. *Saudi J Gastroenterol* 2018;24:317-25.
6. Peng ZW, Liu FR, Ye S, Xu L, Zhang YJ, Liang HH, *et al.* Radiofrequency ablation versus open hepatic resection for elderly patients (>65 years) with very early or early hepatocellular carcinoma. *Cancer* 2013;119:3812-20.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Access this article online	
<b>Quick Response Code:</b>	<b>Website:</b>
	www.saudijgastro.com
	<b>DOI:</b>
	10.4103/sjg.SJG_501_18

**How to cite this article:** Al-Judaibi B, Dokus MK. Surgical resection vs radiofrequency ablation in older adults with early-stage hepatocellular carcinoma: Where do we stand? *Saudi J Gastroenterol* 2018;24:309-10.