



Perspectives on biliary radiofrequency ablation: Review of a recent meta-analysis

We read with great interest the study “Intraductal radiofrequency ablation (RFA) plus biliary stent versus stent alone for malignant biliary obstruction (MBO): a systematic review and meta-analysis” by d’Veras et al [1]. The meta-analysis of randomized control trials is timely and attempts to address the critical topic of utility of biliary RFA in addition to endoscopic stenting for management of MBO. The study, while providing valuable insights, has certain limitations that merit further discussion, particularly related to methodology and data inclusion, for a more comprehensive understanding of the study’s implications.

The authors chose to include studies that reported both endoscopic and percutaneous approaches. We view this as a missed opportunity because there are inherent differences in the types of malignant strictures (e.g., stricture location, length, severity) between patients undergoing endoscopic and percutaneous interventions. In many instances, patients receive percutaneous drainage only when endoscopic therapy has failed or is not feasible. Purely endoscopic inclusion criteria would have eliminated the risk of these biases.

In the meta-analysis, the inclusion of the study by Albers et al. raises concerns due to data inconsistencies reported in the manuscript [2]. Notably, discrepancies exist between the text and figures regarding patient sample sizes and stent patency rates. The original manuscript cites a final sample of 86 patients yet **Fig. 1** and **Fig. 4** indicate initial sizes of 76 and 78, respectively. Moreover, there is a mismatch between reported and calculated stent patency rates at 3 and 6 months for the radiofrequency ablation (RFA) + stent group versus the stent-alone group in the text compared with **Fig. 1** of the publication. Similar concerns are noted with the data on overall survival where the reported results in the text differ from the calculated results

from **Fig. 4**. These inconsistencies compromise the study’s interpretability, suggesting it should have been excluded from the meta-analysis unless the authors clarified the study results with the authors.

While the authors’ efforts in conducting subgroup analyses are commendable, certain critical aspects remain unaddressed. Particularly, factors like the length of stricture and the proportion of patients with distant metastasis, which are thought to influence RFA effectiveness and impact stent patency and survival, were not thoroughly examined. An analysis of these factors could significantly contribute to identifying patient subgroups who might benefit from RFA.

The statistical heterogeneity for the two major outcomes in this meta-analysis was very high: $I^2=98\%$ mean difference for overall survival and $I^2=97\%$ for stent patency, limiting confidence in the results of this study. Lastly, the largest randomized controlled trial comparing endoscopic stenting with and without RFA was not included because it was published after the end date of the search strategy for the systematic review [3].

The authors must be commended for this timely analysis. Yet there is a need for more in-depth exploration of effects of adjuvant RFA in this challenging population to understand and optimize benefit without increasing the risk of harm.

Conflict of Interest

Dr. Vinay Chandrasekhara is consultant for Covidien LP and Boston Scientific and a shareholder in Nevakar, Inc.

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