

Effect of technical variations on efficiency of transjugular intrahepatic portosystemic shunt placement.

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Introduction

Transarterial chemoembolization (TACE) is a well accepted treatment for hepatocellular carcinoma (HCC)[1,2]. However, as there are a number of treatment options for this patient cohort and in an effort to provide patients with the most effective counseling it is important to determine factors which may predict outcomes.

Limited evidence has suggested that patients with tumors which straddle segmental divides may result in worse outcomes [3] however more data is needed as this data originated from a single center. Furthermore, evaluation of other locational factors have not been well studied. Specifically, whether location within the left lobe, which has significantly different anatomic orientation, is yet to be evaluated. The aim of this study was to determine whether the location of a hepatocellular carcinoma (HCC) significantly affects treatment outcomes in patients undergoing transarterial chemoembolization.

Materials and Methods:

Approval for this retrospective study was granted by the institutional review board. All patients gave written informed consent for the TACE procedure. A total of 221 patients who were treated for 354 lesions were included.

The data was evaluated for radiologic response according to the European Association for the Study of Liver disease (EASL) criteria. The patients were also evaluated for overall survival which was censored for liver transplant. The location within the liver by couinaud liver segments, left or right lobe, and whether the patients tumor straddled a segment were all evaluated.

Results

The cohort consisted of 52 (23.5%) women and 169 (76.5%) men. The average age was 62 ± 6.8 years. The majority of lesions were treated with conventional TACE (cTACE) (83.9%, 297/354) while the remainder were treated with drug eluting bead TACE (DEB-TACE) (16.1%, 57/354).

When evaluating overall survival (OS), both segment and lobe of lesion origin were not found to be significant factors, however whether or not it straddled a segment was (figure 1). When looking at time to progression (TTP) (figure 2), neither segment or lobe of origin nor straddling of a segment was found to be associated.

Figure 1: Overall survival by various anatomic considerations. A) Overall survival by couinaud segment. B) Overall survival by lobe. C) Overall survival by straddling of segment.

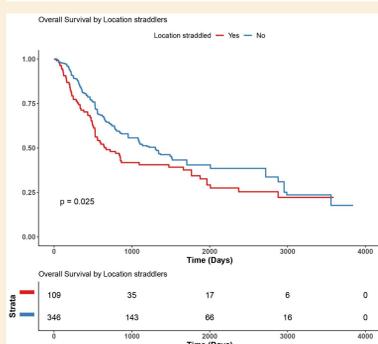
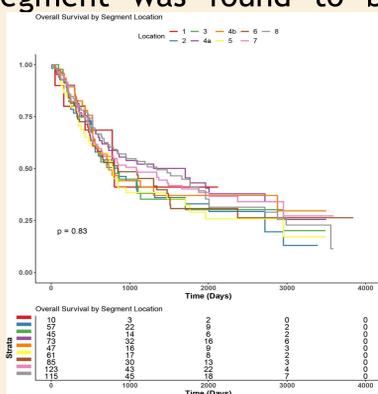
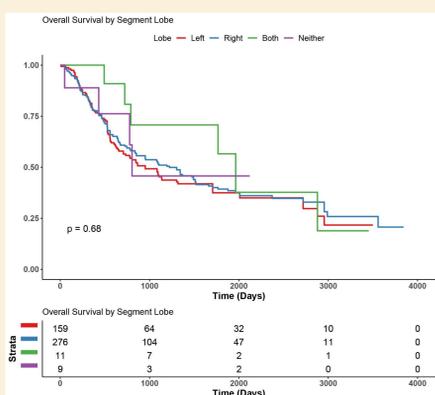
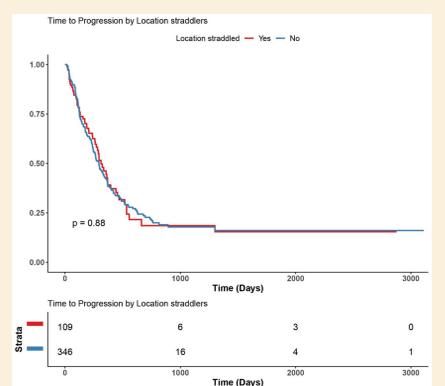
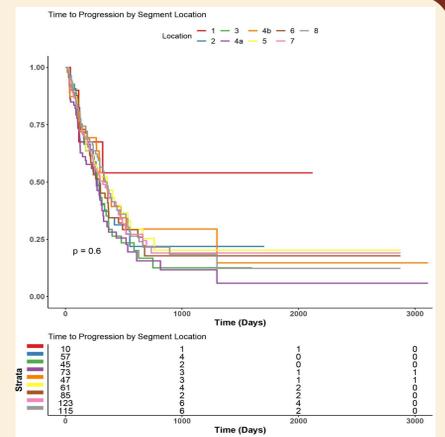
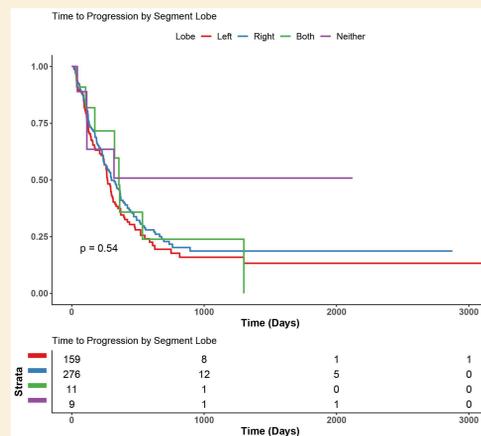


Figure 1: Time to progression by various anatomic considerations. A) Time to progression by couinaud segment. B) Time to progression by lobe. C) Time to progression by straddling of segment.



Discussion

This study evaluates the effect anatomic location has on outcomes in patients with HCC who are treated by TACE. Given the significant differences in anatomy and arterial structure of the left and right lobe, the investigators believed lobe location may effect outcomes, however, this was not found to be the case. Furthermore, the couinaud segment of origin did not have any effect on the TTP or OS in this cohort of patients.

When looking at whether or not a lesion straddled a segment, there was noted to be a significant effect on OS, with those which did not straddle a segment have a better prognosis. However, this was not translated to TTP. It is unclear why the OS would be better in these patients but the TTP would not be significantly different, as TTP is often considered a correlate of OS. However, this finding may relate to the need to treat two segmental arteries when performing TACE in these patients and thus a correlative increase in toxicity of the treatment.

Conclusion

Hepatocellular carcinomas which straddle a couinaud segment may have worse overall survival when treated with transarterial chemoembolization, but lobe laterality does not seem to have an effect.

References

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