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ملاحظات:

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The Value of Subtraction MRI In Assessing The Treatment Response Following TACE For Hepatocellular Carcinoma

Thesis

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Abstract

Background: Hepatocellular carcinoma (HCC) is the world's fifth most frequent malignancy and the main cause of cancer-related fatalities. Early diagnosis of residual tumour or recurrence following TACE is crucial for patients' disease burden to be reduced and their survival prognosis to be improved. Imaging is critical in determining whether to treat the lesions further, repeat the same therapeutic procedure, or adjust the treatment strategy after they have been treated.

Aim: The aim of this study is to present the value of subtraction MRI study in assessing the treatment response following transcatheter arterial chemoembolization (TACE) for hepatocellular carcinoma (HCC) to differentiate between residual tumor viability and post treatment parenchymal changes.

Patients and methods: This prospective study was conducted from (2018 to 2021) on twenty four patients presented with HCC lesions who underwent TACE. Follow up Dynamic MRI with post processing subtracted images were obtained after 1-1.5 months .For patients with imaging evidence of residual tumoral activity second session of TACE was achieved after 1.5 to 2 months. For patients with complete treatment follow up Dynamic MRI with subtracted images were obtained after 3 months with AFP measurement every 2 weeks for 3months.

Results: Twenty four patients their ages ranged from 50 - 78 years were included in our study presented with twenty four lesions at time of diagnosis.All had pre TACE AFP measurement. Patients were excluded for any of the following situations HCC with normal baseline serum AFP (less than 20 ng/mL), extrahepatic metastasis, liver tumors other than hepatocellular carcinoma. patients with no pre TACE AFP measurement. Subtracted dynamic MRI, contrast enhanced MRI and DW-MRI AUCs had a P-value of less than 0.05 indicating that only these variables could be used to reliably distinguish between patients with residual disease and completely treated patients unlike the AUC of AFP, which had a P-value greater than 0.05.The statistical anlysis showed that the subtracted MRI had 87.5% sensitivity, 93.8% specificity 87.5% PPV & 93.8% NPV. The dynamic MRI had 75% sensitivity, 93.8% specificity 85.7% PPV & 88.2% NPV. DW-MRI had 75% sensitivity, 87.5% specificity 75% PPV & 87.5% NPV.And finally the AFP had 62.5% sensitivity, 56.3% specificity 41.7% PPV & 75% NPV.

Conclusion: Subtraction MRI is a useful confirmative post processing application available in most commercial MRI platforms when used in conjunction with other techniques such as DWI, increases the radiologist's confidence in interpreting the treatment response of HCC after TACE and aids clinical management for those who require retreatment sessions.

Keywords: Hepatocellular carcinoma (HCC), Trans-arterial Chemoembolization (TACE), Subtraction MRI, Dynamic MRI, Alpha fetoprotein (AFP), Diffusion Weighted Images(DWI), Area Under Curve (AUC)

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