

**Title : Role of DWI in Detection and Characterization of Focal Liver Lesions****Author Name :** Madhu SD**CO Author Name :** Jaipal R Beerappa**Publication :** Original Article**Department :** Department of Radio diagnosis**Abstract :**

**Introduction:** With widespread use of imaging modalities including USG, triple Phase CT-scan and MRI, there is increase in rate of detecting focal liver lesions in otherwise asymptomatic patient. This poses a diagnostic challenge in an Oncology patient as their accurate diagnosis is must for proper staging in a patient with known oncological disease. The accurate diagnosis of these focal liver lesions requires either FNAC or biopsies. Even though all these modalities help in characterizing liver lesions, MRI is most accurate modality in characterizing these lesions, especially DWI sequence, which provides information at the molecular level of the tissue giving structural and functional information and also helps in assessing the treatment response in tumor cells.

**Aim:** To study the role of DWI/ADC in detecting focal liver lesions and its further characterization. Also, assessing its role in differentiating benign from malignant lesions using DWI/ADC map and providing a quantitative cut off ADC to differentiate benign from malignant lesions. **Materials and Methods:** Total 50 patients with 71 liver lesions were evaluated with diffusion-weighted MR imaging for over a period of 2 years. All these lesions were assessed by experienced radiologist in the field of Onco-imaging. Necessary clinical history and laboratory data were considered and all lesions either biopsied or underwent FNAC for final Diagnosis. All cases underwent DWI at two different b values of b 600 and b 1000 and

corresponding ADC were calculated for each lesion. **Results:** For the current study total of 50 patients (71 liver lesions) were investigated, majority of patients were in age group of 41-60 years (48%). Out of 71 liver lesions, 40(56.3%) were malignant lesions and 31(43.7%) were benign lesions, with most common diagnosis being metastases 17 (34%) followed by HCC 12(24%) and simple cyst 10(20%).

**Conclusion:** Based on qualitative and quantitative assessment of liver lesions on DWI and ADC map, we could characterize liver lesions and differentiate malignant and benign lesions. DWI is a useful diagnostic tool in patients where contrast is contraindicated like in patients with renal impairment.