

ROLE OF PROTON MAGNETIC RESONANCE SPECTROSCOPY IN CHARACTERIZATION OF INTRACRANIAL LESIONS

THESIS

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Degree of Radiodiagnosis

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Purpose: - is to study the role of MR spectroscopy in characterization of intracranial lesions including differentiation of neoplastic from non-neoplastic lesions as well as grading of malignant lesions.

Subject and methods: - MRS was done for 55 patients having intracranial lesions that could not be characterized definitely based upon conventional MRI sequences, or the clinical presentation (upon clinician point of view) are not matching with imaging findings and so their clinician requested further methods of confirmation, single voxel MRS multivoxel MRS spectroscopy findings were interpreted in addition to the conventional MRI images and results then confirmed based on histopathology findings and/or follow up.

Results: -MR spectroscopy showed
94.1Sensitivity80.0Specificity94.1+ve PV80.0 -ve
PV90.9Total accuracy in diagnosis of intracranial lesions.

Conclusion: -MRS is proven effective in differentiation of neoplastic from non-neoplastic brain lesions especially necrotic tumors and abscesses as well as in grading of neoplastic lesions and significantly reducing need for stereotactic biopsies.

Key words: - Magnetic resonance imaging, Magnetic resonance spectroscopy, Brain tumors, Gliomas, Cerebral metastasis, Inflammatory brain diseases, Cerebrovascular stroke.