INTRODUCTION

Magnetic resonance imaging (MRI) is a universal physical technique best known for non-invasive detection and anatomical mapping of water protons (^{1}H). Magnetic resonance spectroscopy (MRS) records protons from tissue chemicals other than water. Therefore it is an imaging technique with potential to record biochemistry in vivo ***(Ross and Bluml, 2001).***

Proton magnetic resonance spectroscopy (^{1}H-MRS) provides a bridge between imaging and metabolism. The metabolic changes are most likely to precede anatomic changes during disease progression and treatment. Because (^{1}H-MRS) is potentially sensitive to such metabolic changes, it offers methods for early detection of diseases and can influences monitoring the effects of therapy ***(Simonetti, et al. 2003).***

(^{1}H-MRS) gives completely different information related to cell membrane proliferation, neuronal damage, energy metabolism and necrotic transformation of brain or tumor tissues ***(Moller, et al. 2002).***

Now a routine automated "add-on" to all clinical magnetic resonance scanners, MRS, which assays regional neurochemical health and disease, is therefore the most accessible diagnostic tool for clinical management of neurometabolic disorders. Furthermore, the noninvasive nature of this technique makes it an ideal tool for therapeutic monitoring of disease and neurotherapeutic decision making. Among the more than 100 brain disorders

that fall within this broad category, MRS contributes decisively to clinical decision making in a smaller but growing number ***(Lin, et al. 2005).***

Differentiation of radiation necrosis from tumor progression can be done by using (^{1}H-MRS) ***(Schlemmer, et al. 2001).***

Furthermore it can be useful for assessment of acute radiation damage ***(Shukla, et al. 2001).***