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*Reply:*

R.K. Gupta

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### Reply:

We greatly appreciate the interest shown by Kapsalaki and Fountas regarding our recent article "In Vivo Proton MR Spectroscopy Evaluation of Pyogenic Brain Abscesses: A Report of 194 Cases."<sup>1</sup> We will try to address the concerns raised by the authors about this study.

It is usually not possible to differentiate cystic intracranial mass lesions on conventional MR imaging. We have shown in our previous studies the sensitivity and specificity of proton MR (<sup>1</sup>H-MR) spectroscopy in the differentiation of cystic intracranial lesions,<sup>2-4</sup> and we did not attempt to differentiate these abscesses from other cystic lesions by using conventional MR imaging. We have previously reported the role of <sup>1</sup>H-MR spectroscopy in the etiologic characterization of the pyogenic brain abscess.<sup>5</sup> The purpose of this study was to look for the sensitivity and specificity of the commonly encountered metabolites in the etiologic characterization of brain abscess. We restricted our discussion to only pyogenic abscess and <sup>1</sup>H-MR spectroscopy. Kapsalaki and Fountas mention that the absence of amino acids seen in our study does not rule out the nonpyogenic etiology. However, we would like to reiterate that the absence of amino acids does not rule out a pyogenic etiology.<sup>1</sup> Diagnosis of the brain abscess was based on the culture of the microbes on aspiration, excision, and repeated aspiration and follow-up on antibiotic therapy. In this study, 56% of the patients with brain abscess had taken antibiotics for a variable period before <sup>1</sup>H-MR spectroscopy, and some of these abscesses were sterile on culture. We have already reported the effect of antibiotic therapy on the metabolite pattern in pyogenic abscesses.<sup>6</sup>

Most patients underwent surgical intervention within 24 hours of the MR imaging. Of 194 cases included in our study, 55 patients had lipids along with lactate, while 11 had only lipids. The spectroscopy data were analyzed by 2 neuroradiologists who were blinded to the microbial culture data, with no significant interobserver variation.

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