UNDERSTANDING THE ROLE OF MRI IMAGING IN THE DIAGNOSIS OF JIA: A CLINICAL PERSPECTIVE

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No Funding

Compliance Statement
N/A

Purpose: The purpose of this review is to educate the physical therapist on the most effective imaging parameters in aims of better understanding the clinical process in diagnosing juvenile idiopathic arthritis early in pediatric patients. In order for the therapist to utilize imaging as an adjunct to therapy, it’s critical to not only understand the hallmark signs and symptoms of the disease, but also the relationship between the physical examination, when referral is indicated, and what image type and parameters that are recommended. This review defines the contrast-agent gadolinium, specific image contrast T1 and T2 sequences producing anatomical images of tissue macroscopically, an open-bore type MRI machine, and limitations of imaging within this population.

Methods: A literature search was conducted between December 2015 and February 2016, using CINAHL. The key words used were “Arthritis, Juvenile Rheumatoid,” which yielded 988 articles. The search was narrowed adding the keywords “diagnostic” OR “imaging”, yielding 150 articles. Finally, the search was narrowed when specifically looking for articles published between 2006-2016 resulting in 86 articles. Articles were included if they compared the MRI contrast features with the physical examination of diagnosis of JIA in pediatric patients, and only those published in the English language. Articles were excluded if they focused on the TMJ or spine, and any other imaging modalities besides MRI. From above stated criteria, six articles were selected for relevance to the topic.

Results: All studies cited in this review illustrate that MRI with contrast-enhanced gadolinium injected, review of both T1 and T2 saturated sequences, and use of an open-bore imaging system will enhance accuracy and efficiency in the diagnosis for JIA.

Conclusion: Inter-professional communication is important in early diagnosis of any patient. This review illustrates how essential imaging can be, and stresses the importance to understand specifics of imaging for the therapist.