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ECR 2022 / C-11716

Effect of double inversion recovery (DIR) technique, by magnetic resonance imaging, in the characterization of brain pathologies: Systematic review

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Purpose

Currently, Double Inversion Recovery (DIR) technique has uncertain impact on clinical routine. According to some authors, the study of brain by Magnetic Resonance with DIR technique increases the diagnostic sensitivity for certain pathologies, however, further studies are needed to determine whether this technique should be added to the standard protocol in case of specific clinical indications. This study aimed to analyze the impact of DIR technique appliance, in Magnetic Resonance, in clinical routine of cerebral pathologies, through systematic review of literature.

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Methods and materials

The literature search was conducting through two databases (PubMed and Directory of Open Access Journals) using the keywords DIR, MRI and brain, until April 30, 2020. Previously, inclusion and exclusion criteria were established and, subsequently, data were extracted manually to select the articles for the study. Reading card were made to articles information's record. The exclusion criteria were articles duplicates, based on pediatrics, veterinary and post-mortem studies, studies in pregnant women and articles published in other languages than Portuguese, English or Spanish. The articles that...

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Results

Out of 143 articles identified, 5 was eliminated for being duplicated, 83 were excluded based on data abstraction and after exclusion criteria application, 55 were analyzed by full text being only 26 of these retained. Regarding the discussion and interpretation section of the 26 articles included, it was considered the need of a meticulous evaluation tacking in account their heterogeneity. From the results analysis, the following outcomes were verified: first of all, it is noteworthy that DIR technique was investigated, mostly, in clinical cases of...

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Conclusion

Different opinions were found about the impact in the application of DIR technique in the clinical routine in a brain Magnetic Resonance. The effect of this technique in studies of multiple sclerosis is highlighted. DIR is useful in studies of multiple sclerosis, epilepsy, Alzheimer and glioblastomas. It seems that the DIR technique is quite promising when associated with protocols obtained in equipment that do not use acceleration algorithms or more complex techniques. The DIR technique can be particularly useful in the study of lesions where...

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Personal information and conflict of interest

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References

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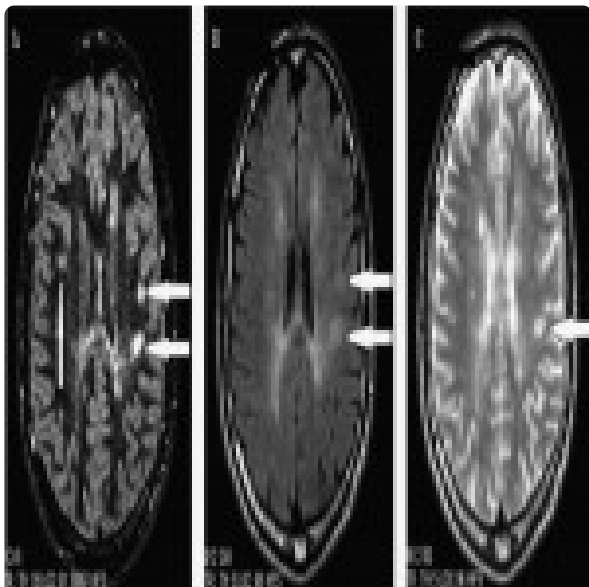


Fig 1: Example of three lesions show in DIR technique (A), but only two are visible in...



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