MRI T2 star liver, myocardium and pancreas among blood transfusion dependent thalassaemic major patients – how we do it

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Abstract

To illustrate single center experience on the diagnostic value of magnetic resonance imaging (MRI) T2* of liver, myocardium and pancreas among blood transfusion dependent thalassaemic major patients. Thalassaemia major patients require repeated blood transfusions, iron which is the end product of haemoglobin in the red blood cells, accumulates in different organs, resulting in various organ failures later in life. Magnetic resonance imaging (MRI) T2* technique has known to be accurate, valid and non-invasive method for assessment of tissue iron storage. Our institution has performed this technique to help clinician in tailoring the iron chelating agent therapy based on the MRI T2* findings since 8 years ago. Since then, the technique has evolved dramatically from the initial liver and myocardium scan to the newly added pancreas in our routine scan. We have learned through trial and errors and collaboration with other international institution to refine our protocols. This review discusses the value of MRI in assessment of iron overload among transfusion dependent patients. This review provides the overview of the indication, technical as well as practical issues in interpreting MRI T2*. We would also want to discuss an alternative method of interpretation of the T2* results using a web-based online open source software that has been developed by one of our co-authors which is useful and practical for radiologists. MRI T2* has revolutionised the management of thalassaemic patients. It provides a safer and easier ways to provide solid ground evidence for clinicians in the management of iron chelation therapies and eventually reduce the destructive effect of iron load in patient’s vital organs and thus reduces the early mortality and morbidity associated with this group of patients.

Keywords: MRI pancreas, T2 Star, iron overload, thalassaemia

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