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Author's reply

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Reply

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Dear Editors,

We thank the authors Karthikeyan and Kanakarajan for their kind comments and insight.

As their remarks emphasise, the clinical implications of finding endolymphatic hydrops on magnetic resonance imaging (MRI), especially mild changes, have yet to be clearly elucidated before imaging can be used as a reliable tool in the evaluation of Ménière's disease. Variable diagnostic accuracy is currently reported in the literature, and it should be appreciated that there are many parameters that influence the outcomes, including choice of patient characteristics, MRI sequence, sequence parameters and analytic approach.

In our opinion, there are two main areas of particular interest that will help to further advance our understanding. Firstly, we need long-term longitudinal follow-up data on patients with asymptomatic hydropic changes on MRI. Secondly, and perhaps more importantly, there is a great need for the development of MRI techniques that will allow serial imaging of a control cohort without concerns regarding the repeated administration of intravenous gadolinium contrast agents. Our article alluded to the use of high-resolution T2-weighted imaging of the saccule as a marker of Ménière's disease. If further validated, the application to larger control groups would become feasible, which would in turn provide robust data on the diagnostic accuracy of imaging techniques. It would also increase the acceptability of serial imaging studies performed to evaluate the natural history of endolymphatic hydrops in Ménière's disease, and to assess objective markers of treatment response. We are all aware of how long-term surveillance with interval MRI has changed our understanding of the natural history of vestibular schwannomas.

We are also grateful to Karthikeyan and Kanakarajan for their interest in ultra-high field MRI such as 7 Tesla imaging. In fact, we have recently been awarded a research grant by the Royal College of Radiologists to conduct a pilot study using T2-weighted and delayed post-gadolinium imaging on a 7 Tesla MRI system in patients with unilateral definite Ménière's disease. A new major challenge will be developing and establishing the optimal MRI parameters for endolymphatic hydrops imaging at 7 Tesla, as the parameters applied to imaging of the inner ear at 3 Tesla or imaging of the brain at 7 Tesla are not transferrable to ultra-high field imaging of the inner ears.