White matter microstructural abnormalities in amnestic mild cognitive impairment

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Studies that examined white matter alterations in amnestic mild cognitive impairment (aMCI) abound. We conducted this meta-analysis on 77 studies. Among the many significant ROI-related findings, reliable FA and MD alterations in the fornix, uncinate fasciculus, and Parahippocampal cingulum were observed in aMCI. Larger effects were observed in MD relative to FA. The ALE meta-analysis revealed a significant FA decrease among aMCI subjects in the posterior corona radiata. These results provide robust evidence of the presence of white matter abnormalities in aMCI. Our findings also highlight the importance of carrying out both ROI-based and whole-brain-based research to obtain a complete picture of white matter abnormalities in aMCI.

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