Reviewer’s report

Title: Different associations of white matter lesions with depression and cognition

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Reviewer: Martin R Farlow

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Dr. Lee and colleagues report 3 site study looking at relationships between white matter lesions, frontal atrophy, cognition and history or presence of depression. They found WML seem to be associated with frontal atrophy and depression directly, but relationship with cognition is indirect through frontal atrophy. Study populations well described modeling and analyses appropriate and results appropriately discussed and major findings seem well supported. No major criticisms, observations or questions; i) many assumptions in modeling and analyses with a lot of questions being asked of relatively modest number of patients. Was the analysis plan pre-specified? ii) were there ethnic or site differences amongst the groups? iii) how many patients were excluded for depression or small strokes? In other words how selected in this population?

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

None