

## Memantine-induced Decompensation in a Patient with Lewy Body Dementia

### Dear Editor,

Lewy body dementia is a neurodegenerative disease of the elderly characterised by cognitive impairment coupled with mild parkinsonism, visual hallucinations and a fluctuating mental status.<sup>1</sup> Diagnosis is established by autopsy or brain biopsy findings of characteristic Lewy bodies within neurons. However, one can usually identify Lewy body dementia on clinical grounds alone.<sup>1</sup> The management of Lewy body dementia in general is similar to Alzheimer's disease, with first-line treatment being cholinesterase inhibitors such as donepezil, galantamine or rivastigmine.<sup>1</sup> It is currently unclear whether the second main medication for Alzheimer's disease, memantine, should also be used for Lewy body dementia. Memantine, a non-competitive inhibitor of N-methyl-D-aspartate glutamate receptors, has proven benefits in slowing the progression of Alzheimer's disease especially when used in combination with a cholinesterase inhibitor.<sup>2</sup> A retrospective case study of 11 patients with Lewy body dementia found that 7 of the patients had improvement in cognition with memantine but 4 had clinical deterioration.<sup>3</sup> Two other papers describe the worsening of delusions and hallucinations in 4 Lewy body dementia patients.<sup>4,5</sup> Summarised here is a case report of a woman I saw in my practice, which serves to augment the currently meagre published data available about the effects of memantine in patients with Lewy body dementia.

An 82-year-old woman living in a nursing home and diagnosed with mild Alzheimer's was started on donepezil. She began manifesting cogwheel rigidity, which was worse on the left side and intermittent pill-rolling tremors. An addition of levodopa/carbidopa 25/100, 1 tablet 3 times daily, relieved the rigidity and tremor, but caused significant nausea and orthostatic hypotension. Both medications were then discontinued and memantine was initiated as an alternative anti-dementia agent. The stiffness and tremor went away, but the patient began manifesting delusions, visual hallucinations and episodic confusion. At that point, a diagnosis of Lewy body dementia was made, which was later confirmed by a consultation with a neurologist. Memantine was discontinued; the hallucinations and delusions subsided almost completely, with only occasional visual hallucinations reported each month instead of a daily basis when she was at her worst. Delirium persisted, however, until the patient was restarted on donepezil, similar to other case reports.<sup>6</sup> She has been stable over 6

months of follow-up, with improvement in memory and orientation but at the cost of continued Parkinsonism.

Is the response of my patient and the few others like her in the literature typical for Lewy body dementia? If most patients with Lewy body dementia do not have adverse effects, one could make a case for prescribing them memantine for neuroprotection as well as to maximise cognitive function. What is needed now is a large, well-powered international trial conducted at academic medical centres, with rigorous neuroimaging and neuropsychological testing, to establish once and for all the proper role of memantine in the management of Lewy body dementia. Given that Lewy body dementia is found at autopsy in up to 20% of patients with dementia,<sup>1</sup> this is clearly an issue that warrants further study.

### REFERENCES

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