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Case Report

Statin Cessation Improves Cognition, Function and Epilepsy in An Elderly Woman

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Introduction

Statins are one of the most commonly prescribed cholesterol-lowering agents in the world. In the UK, around 7.5 million adults are prescribed a statin, both for primary and secondary prevention [1]. However, researchers have questioned the efficacy of cholesterol-lowering as a strategy for cardiovascular disease [2,3], and there is evidence that high levels of total cholesterol is associated with lower all-cause mortality in terms of cancers, infection and death [4-6] This is especially true in elderly patients, where there is an inverse correlation between cholesterol levels and mortality. [7,8] Cholesterol is an essential substance that is needed by the brain and nerves for myelin production, as well as cell-to-cell communication with the help of lipid rafts. It is unsurprising that cholesterol lowering comes with a variety of neuropsychiatric side effects that have been documented in the literature. Some of these side effects include dementia-like symptoms, seizures, depression, suicidal ideation, homicidal ideation, insomnia, and aggression. [9-11] There is even evidence that stopping a statin has reversed dementia-like symptoms in elderly patients, symptoms of which returned with rechallenge [12,13].

Case Report

An 82-year-old woman with a history of Hypertension, Type 2 Diabetes, Ischaemic Heart Disease, Heart Failure, Multiple Myocardial Infarctions, Epilepsy, Anxiety, Depression and Dementia presented to hospital with general functional decline, and increased seizure episodes. Her family reported that she became non-verbal for the past 1 month, and was not recognizing family members as much. She was diagnosed with Dementia 9 years ago, and CT scan revealed age related involutional changes, and chronic microvascular ischaemic changes.

Liver functions were abnormal (ALT 338, AST 116, ALP 67), therefore the statin was suspended. Post suspension of statin, patients' cognition improved significantly, so did her liver functions, seizures frequency.

Parameter	Before	After
Seizures	3-4 Generalized Tonic Clonic Seizures a month	No seizures reported
Liver functions	ALT 338, AST 116, ALP 67	ALT 55, AST 20, ALP 56
Cognition	Non-verbal, not responsive, or talking or recognizing family members	Started talking again, recognizing and responding to family members, asking to go home
Functional status	Reduced mobility, bedbound	Started moving and sitting out on a chair

Discussion

There is increasing evidence that statins have severe neuropsychiatric and cognitive side effects. An analysis of trials done on statins for primary prevention reveals that statins only have a benefit of 0.35% reduction in cardiovascular events [14]. Even in patients with established cardiovascular disease, it only provides an average mortality benefit of 3-4 days [15] It is important to note that a documented side effect of statins is type 2

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diabetes mellitus, which is the most potent risk factor for cardiovascular events [16,17]. Given this evidence, it is important for clinicians to carefully analyze the risks of prescribing a statin, especially in elderly patients or those with neurocognitive background. I suggest that statins are inappropriate in elderly patients, and should be stopped, as they can cause muscle toxicity as well as neurocognitive side effects - which is a major risk factor for cognitive and functional decline in elderly patients. In this case, this patient with multiple co-morbidities and extreme frailty presented with a symptom of advanced dementia (non-verbal, unresponsive, not talking to family members), and stopping the statin significantly improved her cognition and functional status.

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