Title: Association between Early Initiation of Statin Therapy in Patients with Hyperlipidemia and Incidence of Dementia

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Abstract

Background:

Dementia will become an increasingly major cause of morbidity and mortality in the aging population. Management of risk factors like hypertension and hyperlipidemia could prevent or delay the onset of dementia. Lipid-lowering agents like statins are effective in reducing cardiovascular risk, but their effect on dementia is unclear.

Objectives:

This study aims to examine the association between early statin initiation after a hyperlipidemia diagnosis and the incidence of dementia. Secondary outcomes included incidence of stroke and coronary artery disease (CAD) and well as LDL levels.

Methods:

This is a retrospective cohort study using de-identified patient data from the US Collaborative Network of the TriNetX Research Network. Patients age ≥65 with a diagnosis of hyperlipidemia (defined by ICD-10 code E78 or LDL level greater than 130) before the age of 50, were divided into two groups: those who started statin therapy within five years of their hyperlipidemia diagnosis, and those after five years of the diagnosis. Patients who had a dementia diagnosis prior to the initiation of statin therapy were excluded. The groups were compared after 1:1 propensity score matching.

Results:

Prior to matching, 6513 patients were identified in the early statin initiation group, and 12, 899 patients were identified in the late statin initiation group. Early initiation was associated with a decreased risk of dementia (OR = 0.752, 95% CI [0.596, 0.949]) but an increased risk of stroke (OR = 1.408, 95% CI [1.262, 1.571]). There was no significant difference in the incidence of CAD (OR = 0.951, 95%CI [0.951, 1.087]). After matching and accounting for collinearity, each group contained 5822 patients. There was no difference in the incidence of dementia between the early and late initiation groups (OR = 1.153, 95% CI [0.841, 1.581]). However, early initiation of statin therapy appeared to have greater LDL-lowering effects but was associated with increased incidence of stroke (OR = 1.663, 95% CI [1.436, 1.926]) and CAD (OR = 1.21, 95% CI [1.112, 1.318]).

Conclusion:

Early initiation of statin therapy after a hyperlipidemia diagnosis does not appear to be associated with risk reduction of incident dementia. The increased incidence of stroke and CAD with early statin initiation could be due to higher baseline LDL levels in that group.