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ORIGINAL ARTICLE

Statin use prior to ischemic stroke onset is associated with decreased in-hospital mortality

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ABSTRACT

Statins can reduce the risk of stroke in at-risk populations and improve survival after acute ischemic stroke (AIS) among patients with previous statin use. This study aimed to investigate the impact of statin use before AIS onset on in-hospital mortality and identify the factors related to in-hospital mortality among patients with and without previous statin use. A retrospective cohort study of all patients with AIS attending hospital from June 1, 2008 to December 31, 2008. Data were collected from medical records including demographic information, diagnostic information, risk factors, previous statin use, and vital discharge status. Chi-square, Fisher's exact tests, student's *t*-test, and Mann–Whitney *U* test, whatever appropriate, were used to test the significance between the variables, and multiple logistic regression was used to identify factors associated with in-hospital mortality. Altogether, 386 patients with AIS were studied, of which 113 (29.3%) had a documented previous statin use. A total of 62 (16.1%) patients with AIS died in hospital. In-hospital mortality was significantly lower among previous statin users ($P = 0.013$). The presence of atrial fibrillation (AF) increased in-hospital mortality among patients with or without previous statin use. The independent predictors for in-hospital mortality among AIS patients without previous statin use were the presence of diabetes mellitus ($P = 0.047$), AF ($P = 0.045$), and renal impairment ($P < 0.001$). The prophylactic administration of statins significantly reduces post-AIS in-hospital mortality. Furthermore, the identification of predictors of in-hospital mortality might reduce death rates and enhance the application of specific therapeutic and management strategies to patients at a high risk of dying.

INTRODUCTION

Stroke is one of the most leading causes of significant disability and mortality worldwide [1]. Dyslipidemia is a well-established modifiable risk factor for vascular disease, especially ischemic heart disease (IHD) and acute ischemic stroke (AIS) [2]. Moreover, screening and better lipid control have shown a relative risk reduction for AIS [3,4] and an improvement of AIS outcomes [5,6].

Statins [3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase inhibitors] are widely used for the treatment of dyslipidemia. These agents have also been proven to significantly reduce the risk of AIS in at-risk populations [7,8]. Observational studies have also examined the effect of statin use before an AIS event on stroke-related outcomes. These studies show that among patients with AIS, previous use of statins is associated with better functional outcomes [5,6].