Evaluating statin utilisation in clinical practice in Scotland: Impact of statin intensity on adherence and persistence to therapy

Tanja Mueller1, Renata Cristina R. Macedo do Nascimento2, Marion Bennie1,3, Brian Godman1,4, Simon Hurding5, Sean MacBride Stewart6, Augusto Afonso Guerra Junior2, Francisco de Assis Acurcio2, Alec Morton7, Amanj Kurdi1

1Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Glasgow, UK
2School of Pharmacy, Federal University of Minas Gerais, Belo Horizonte, MG, Brazil
3Public Health and Intelligence Strategic Business Unit, NHS National Services Scotland, Edinburgh, UK
4Division of Clinical Pharmacology, Karolinska Institutet, Stockholm, Sweden
5Directorate for Health Finance, The Scottish Government, Edinburgh, UK
6Prescribing and Pharmacy Support Unit, NHS Greater Glasgow & Clyde, Glasgow, UK
7Strathclyde Business School, University of Strathclyde, Glasgow, UK

Background: Based on recent clinical trial evidence, updated treatment guidelines in the UK recommend high-intensity statin therapy (atorvastatin 80mg) for secondary prevention of cardiovascular disease. However, with this high statin dose, there are concerns about a potential increase in the incidence of statin-related side effects, which might affect patients’ adherence and, in turn, clinical outcomes. Hence, this study aimed to evaluate the effect of statin intensity on adherence and persistence to therapy.

Objectives: To evaluate adherence, discontinuation, and persistence to high-intensity statin in comparison to moderate and low-intensity in Scotland.

Methods: Retrospective cohort study using linked health records. The study population included patients (≥ 18 years) initiated on statins between January 2010 and December 2015. Statin treatment was stratified into high, moderate, and low-intensity based on the current National Institute for Health and Care Excellence classifications. Treatment discontinuation and persistence were evaluated using the refill-gap and anniversary methods, respectively; adherence was assessed by calculating the proportion of days covered (PDC).

Results: A total of 73,716 patients (mean age 61.4 years [SD 12.6]) initiated statins during the study period: high-intensity n=7,163 (9.7%), moderate-intensity n=65,125 (88.3%), and low-intensity n=1,428 (1.9%). High-intensity therapy was more common among males (10.7%) than females (8.6%), and most common (17.1%) in the youngest age group (18 – 24 years). The majority of patients initiating high-intensity treatment received either atorvastatin 20mg (43.1%) or 40mg (32.3%), while 22.8% received atorvastatin 80mg. Crude discontinuation rates (50.9% high-intensity versus 75.5% low-intensity) and 1-year persistence (74.7% high-intensity versus 53.1% low-intensity) differed significantly between
intensity levels; crude adherence (PDC ≥ 80%) was highest among high-intensity patients with 63.7%, compared to 51.6% and 40.5% in moderate and low-intensity, respectively.

**Conclusion:** Increasing the intensity of statin therapy does not seem to negatively impact adherence and persistence to treatment, although findings could be due to confounders (e.g. primary versus secondary prevention) and/or the low proportion of patients using the recommended high dose statin. Further analysis is ongoing to adjust for confounders, and to evaluate clinical outcomes associated with high-intensity statin therapy.