ETHNIC VARIATIONS IN LIPID-LOWERING IN RESPONSE TO A STATIN (EVIREST): A SUBSTUDY OF THE ANGLO-SCANDINAVIAN CARDIAC OUTCOMES TRIAL (ASCOT)

Background: Statins improve lipid profiles and reduce cardiovascular morbidity and mortality but there are few data on their relative effects in different ethnic groups.

Methods: We used data from the randomised, placebo-controlled Anglo-Scandinavian Cardiac Outcomes Trial-Lipid Lowering Arm (ASCOT-LLA) to conduct a prespecified comparison of the lipid-lowering efficacy of statin therapy among hypertensive participants from different ethnic groups in the UK and Ireland. The effects of atorvastatin (10mg daily) and placebo on fasting plasma lipid profiles were compared in matched groups of Whites and Blacks (of African-Caribbean or African origin) and Whites and South Asians (from the Indian subcontinent), adjusting for placebo effect.

Results: In the active treatment group, 156 Blacks and 72 South Asians were compared in matched groups of Whites and Blacks or between Whites and South Asians after adjusting for placebo effect; similar proportions in each group achieved lipid targets. There was no significant effect of atorvastatin on high-density lipoprotein (HDL)-cholesterol in any group.

Conclusions: A standard dose of atorvastatin improved lipid profiles to a similar extent in Whites, Blacks and South Asians. Given the proven benefits of statins, these results suggest that, when used in standard doses, they are likely to be similarly effective for cardiovascular disease prevention in all ethnic groups. (Ethn Dis. 2011;21(2):150–157)

Key Words: Statins, Lipid Levels, Cholesterol, Ethnic Groups

INTRODUCTION

Statins (3-hydroxy-3-methylglutaryl coenzyme A [HMGCoA] reductase inhibitors) lower low-density lipoprotein (LDL) cholesterol and have been shown to cause important reductions in coronary and other cardiovascular events as well as all-cause mortality. Although the lipid-lowering effects of statins have been demonstrated in a variety of non-White populations, there is some evidence from observational studies suggesting that different ethnic groups may differ in their responsiveness. The existence of any such differences may have important implications for cardiovascular disease prevention. However, few data published so far have directly compared the lipid-lowering efficacy of statins in different ethnic groups within (or between) randomised trials.

We therefore used data from the Anglo-Scandinavian Cardiac Outcomes Trial-Lipid Lowering Arm (ASCOT-LLA) to conduct a prespecified comparison of the lipid-lowering efficacy of atorvastatin among different ethnic groups in the United Kingdom and Ireland. Here we present the findings of the Ethnic Variations in Response to a Statin (EVIREST) Study, a substudy of ASCOT-LLA, which aimed to compare the impact of atorvastatin among White participants compared with Blacks (of African-Caribbean and African origin), and those of South Asian origin (from the Indian subcontinent).

METHODS

ASCOT was a multicenter, international, randomised trial, which compared two antihypertensive strategies for the prevention of coronary heart disease (CHD) and vascular events in patients with hypertension and at least three additional cardiovascular risk factors but no history of CHD. In addition, by means of a two-by-two factorial design, ASCOT included a double-blind randomised comparison of the effects of atorvastatin with placebo among those participants with total cholesterol ≤6.5 mmol/L. The trial conformed to good clinical practice guidelines and was conducted in accord with the Declaration of Helsinki. The protocol was reviewed and ratified by central and regional ethics review boards or by national ethics and statutory bodies as appropriate in each country.

The methods and main results of ASCOT-LLA have been described previously. Briefly, participants eligible for inclusion in the blood pressure-lowering arm were randomised to a...