EDITORIAL

Diabetes and Statin Therapy

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A total of 13 cohort studies and seven meta-analyses were taken into consideration by the study of Beckett RD *et al* (1) , who concluded that Statins have been associated with a small, but statistically significant risk of new-onset diabetes. Patients with risk factors for developing diabetes mellitus may be at higher risk and this risk is likely outweighed by the benefits of reducing cardiovascular risk.

Metaanalysis by Navarese EP *et al* (2) showed that among different statins, pravastatin 40 mg/day is associated with the lowest risk for new-onset DM compared with placebo (odds ratio 1.07). Conversely, rosuvastatin 20 mg/day was numerically associated with 25% increased risk for DM compared with placebo (odds ratio 1.25) The impact on DM appeared to be intermediate with atorvastatin 80 mg/day compared with placebo (odds ratio 1.15). These findings were replicated at moderate doses. Thereby, indicating that different types and doses of statins show different potential to increase the incidence of DM.

Whereas, Preiss D *et al* (3) in their study reported that only intensive-dose statin therapy was associated with an increased risk of new-onset diabetes compared with moderate-dose statin therapy.

Swerdlow DI, *et al* (4) documented that the increased risk of type 2 diabetes noted with statins is at least partially a consequence of inhibition of 3-hydroxy-3-methylglutaryl-CoA reductase.

Other proposed mechanism in the form of anti-inflammatory effect of statins may be a key pleiotropic effect that improves cardiovascular disease risk. However, a series of findings have shown that statins increase the pro-inflammatory cytokine. Inflammation can promote ineffective insulin action (insulin resistance), which often precedes diabetes. Other possible mechanism for how statins increase the risk of diabetes is although unknown, a possible explanation is through a reduction in adiponectin levels (5).

However, the study of Furuya-Kanamori L *et al* (6) refuted this correlation and suggested that Statins are associated with only a very small increase in risk of diabetes mellitus. Previous research selected the outcomes with the lower baseline risks and therefore the actual risk associated with statins has been largely over-estimated. Similarly Sattar N *et al* (7) documented that Statin therapy is associated with a slightly increased risk of development of diabetes, but the risk is low both in absolute terms and when compared with the reduction in coronary events.

In those predisposed to the development of diabetes (the insulin resistant, obese and older patients) statins may increase the risk of developing diabetes. However, statins have not been clearly shown to increase diabetic microvascular complications (retinopathy, nephropathy and neuropathy). Thus, the clinical significance of increased glucose levels in patients treated on statins is uncertain. (8) Thus, clinical practice in patients with moderate or high cardiovascular risk or existing cardiovascular disease therefore should not change.

References

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