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RISK OF NEW-ONSET DIABETES AND CARDIOVASCULAR RISK REDUCTION FROM STATIN THERAPY DIFFERS IN PRE-DIABETICS AND NON PRE-DIABETICS: A TNT AND IDEAL SUBSTUDY

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Background: Statin therapy slightly increases the risk of new-onset diabetes (NOD). Whether the risk/benefit of patients with pre-diabetes (PD) differs from those without PD has not been explored. We therefore studied the rates of NOD and cardiovascular (CV) event reduction in these two populations.

Methods: We pooled patients without diabetes at baseline from the TNT study, which randomized 10,001 patients with coronary heart disease to either atorvastatin 80 mg or 10 mg, and the IDEAL study, which randomized 8,888 patients with a history of myocardial infarction to atorvastatin 80 mg or simvastatin 20-40 mg. Patients (n=15,056) were divided into those with baseline PD, defined as fasting blood glucose (FBG) 100-125 mg/dL, or no baseline PD. Cox proportional hazards models were used to compare NOD and CV event rates.

Results: Patients with (n=5924) and without (n=9132) PD at baseline were evenly balanced between the two statin treatment arms. There was a large increase in risk for NOD in PD vs non-PD groups (14.2% vs 2.9%, HR 5.29, 95% CI 4.6-6.1, p<0.001). Within the PD group, NOD increased across terciles of baseline FBG, from 6.2% to 9.8% to 27.2%. CV events occurred in 10.5% and 9.6% of PD and non-PD groups (HR 1.11, 95% CI 1.0-1.23, p=0.051). High-dose compared to moderate-dose statin treatment reduced CV events both in patients with PD (9.5% vs 11.5%, HR 0.82, 95% CI 0.70-0.96, p=0.014) and without PD (8.9% 10.2%, HR 0.87, 95% CI 0.76-0.99, p=0.038).

Conclusion: PD greatly increases the risk of NOD, and even within the PD group, the risk of NOD increases with increasing baseline FBG. High-dose statin treatment reduces CV events both in patients with and without PD.