RISK OF DIABETES AMONG INTENSIVE- AND MODERATE-DOSE STATIN USERS WITH POTENTIAL MODIFYING EFFECTS OF TREATMENT DURATION

BACKGROUND

• Evidence from clinical trials indicates that high-intensity statins reduce atherosclerotic cardiovascular risk more than moderate- or low-intensity statins.1-7

• However, the cardiovascular benefits offered by high-intensity statins may be offset by a greater possibility of side effects, including the potential for increased diabetes risk as noted in recent studies.8-10

• A meta-analysis of five statin trials involving 32,752 participants found that the odds of developing diabetes increased by 12% among those taking intensive-dose statins compared to those taking moderate-dose statins.11

PURPOSE

• To assess whether the risk of diabetes differs between intensive- and moderate-dose statin users using real-world data

• To examine the potential modifying effects of treatment duration on statin dosage intensity and the risk of diabetes while accounting for patients’ medication adherence

METHODS

• Retrospective cohort design

• Patients aged 20-63 years at index within the Truven Health MarketScan® database period of January 1, 2003 and December 31, 2004

• New statin users who did not have a diagnosis of diabetes mellitus (ICD-9-CM codes 250.xx) in the pre-index period

• Dependent variable = survival time

• Analysis: Kaplan-Meier curves, log-rank test, Cox proportional hazards regression

• Sensitivity analyses: adjusted for time-dependent covariates and propensity score covariate adjustment

RESULTS

• Intensive-dose statin users had a 42% higher risk of diabetes compared to moderate-dose statin users

• Risk of diabetes was associated with the use of intensive doses of simvastatin (HR=1.71; p<0.001) and atorvastatin (HR=1.38, p<0.001), but not rosuvastatin (HR=1.09; p=0.72)

• Statin users on long-term therapy had a higher risk of diabetes (HR=1.30; p=0.001)

• Risk of diabetes did not differ between intensive- and moderate-dose statin users that are on short-term therapy (HR=1.51=0.12), but risk significantly increased when both groups are on long-term therapy (HR=1.52, p<0.001)

• Risk of diabetes is further increased when intensive-dose statin users are on long-term therapy and moderate-dose statin users are on short-term therapy (HR=2.03, p<0.001)

DISCUSSION

• Since a sustained statin therapy is needed to achieve optimal cardiovascular outcomes, long-term, moderate-dose statin therapy appears to confer a lower diabetes risk compared to long-term, intensive-dose statin therapy and may be optimal especially among patients with a lower cardiovascular risk profile

• As the ATP IV guidelines currently emphasize the use of appropriate statin intensity (as opposed to use of LDL-C targets in ATP III) to reduce atherosclerotic cardiovascular disease, clinicians should be vigilant regarding the potential development of new-onset diabetes especially in patients receiving long-term, intensive-dose statin therapy

IMPLICATIONS

• Statins are generally safe but are associated with a moderate increase in risk of new onset diabetes

• Individual statins differ in their diabetogenic properties

• Intensive-dose statin users are more at risk of diabetes

• Treatment duration modified the magnitude of diabetes risk between intensive- and moderate-dose statin users

CONCLUSIONS

REFERENCES


