Abstract 15435: Prevention of Diabetes and Reduction in Major Cardiovascular Events in Studies of Subjects with Impaired Glucose Tolerance: Meta-analysis of Randomized Controlled Clinical Trials

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Abstract

Background: Impaired glucose tolerance is a pre-diabetic state, treatment of which may prevent or delay the onset of overt diabetes and thus potentially reduce major cardiovascular (CV) events. We therefore sought to determine whether interventions (including diet, exercise and pharmacological therapy), altered all-cause and cardiovascular related mortality in such subjects.

Methods: We performed a meta-analysis of prospective, randomised controlled trials (RCTs) that were identified in medical literature and databases. Trials were eligible for inclusion if they reported all-cause mortality rates (at a minimum), recruited at least 100 patients and had a follow up of at least one year. Interventions were divided into pharmacological and non-pharmacological.

Results: Nine RCTs that enrolled 22,945 patients met the above entry criteria. Diabetes was delayed or prevented by these interventions (risk ratio 0.83, 95% CI 0.80–0.86) vs control. Non-drug approaches (n=3,495) were superior to drug-based approaches (n=20,665) in diabetes prevention (0.52, 0.46–0.58 vs 0.87, 0.84–0.89, P<0.05). There was no difference in risk of all-cause mortality in the intervention versus control group (0.95, 0.87–1.05, Figure). There was also no difference in all-cause mortality when the drug sub-group only were considered (0.97, 0.88–1.07), nor in the non-drug sub-group (0.81, 0.61–1.09). There was also no difference in CV death (1.04, 0.89–1.21) or myocardial infarction (0.95, 0.81–1.11) overall. Stroke death was, however, borderline reduced (0.84, 0.70–1.00) with intervention vs control.
**Conclusions:** Despite interventions being mostly successful in retarding progression to overt diabetes, this did not result in reduced all-cause mortality or death due to major cardiovascular events, with the possible exception of stroke.
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