

Incidence of Myocardial Infarction is Associated with Tight Glycemic Control Only in DM Individuals with the Hp 2-2 Genotype.

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Background. The Haptoglobin (Hp) gene is polymorphic in man with two classes of alleles denoted 1 and 2. Several studies have demonstrated that individuals with DM and the Hp 2-2 genotype are at increased risk for MI. We sought to determine if this relationship between Hp genotype and the risk of MI was affected by the degree of glycemic control in a community based longitudinal study.

Methods. We obtained a Hp genotype on 2230 individuals (283 Hp 1-1, 1241 Hp 2-1 and 706 Hp 2-2), 55 years of age or older with DM from Northern Israel. Study participants were followed for up to 3 years for the incidence of MI.

Results. At baseline there were no significant differences between groups in their DM characteristics (HbA1c, duration) or in the prevalence of CVD (25%). After stratification of study participants to those with an average HbA1c of above or below 7.0, we found that only in individuals with the Hp 2-2 genotype was strict glycemic control associated with a reduction in the incidence of MI (RR 2.80, 95% CI 1.33-6.92, p=0.0195, NNT=30.7).

Conclusions. Optimal utilization of health care resources for risk factor modification should be focused on DM individuals with the Hp 2-2 genotype. Benefit from tight glycemic control only in a subset of the DM cohort defined by the Hp 2-2 genotype may explain the inability to show a benefit from tight glycemic control on reducing MI in all individuals with DM.

