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onset of sustained ischemia, and was maintained for the duration of 20 min of coronary occlusion. The IN group received 15 min of waiting period followed by 20 min of ischemia. The ischemic and the non-ischemic tissues in the IN and IH hearts were separated and processed for tissue adenosine triphosphate (ATP), creatine phosphate (CP), lactate and glycogen determination.

Results: Ischemia decreased ATP, CP and glycogen content (by 67%, 73% and 73% respectively) and caused 13-fold accumulation of lactate in the ischemic vs. the non-ischemic area in the IN hearts. However, mild, regional hypothermia preserved ATP and glycogen stores in the ischemic area of IH rabbits by 43% and 83% respectively (i.e. 1.20±0.11 µmol/g in the IH vs. 0.84±0.06 µmol/g in the IN group, p<0.05 for ATP, and 1.58±0.15 mg/g in the IH vs. 0.72±0.07 mg/g in the IN, p<0.05 for glycogen). In addition, mild regional hypothermia caused a trend towards the preservation of CP by 14% in the ischemic tissue (0.81±0.15 µmol/g in the IH group vs. 0.71±0.07 µmol/g in the IN group).

Conclusion: It is likely that the mechanism whereby mild regional hypothermia reduces infarct size is by slowing the metabolism of the crucial high energy phosphate, ATP. This is the first study to show that in a model of regional ischemia local therapy with very mild reductions in myocardial temperature preserves ATP within the ischemic risk zone.

1042 POSTER SESSION
Using Biomarkers in Acute Coronary Syndromes

Sunday, March 07, 2004, 3:00 p.m.-5:00 p.m.
Morial Convention Center, Hall G
Presentation Hour: 3:00 p.m.-4:00 p.m.

1042-77 Haptoglobin Polymorphism Is Associated With Short-Term Mortality and Heart Failure in Patients With Diabetes and Acute Myocardial Infarction

Mahmoud Salehman, Daron Aronson, Michael Kapelovitch, Walter Markiewicz, Haim Hammashen, Shunned Nanto, Rachel Lotan, Michael Shochat, Nina S. Levy, Andrew P. Levy, Rambam, Haifa, Israel

Introduction: Patients (pts) with diabetes presenting with acute myocardial infarction (AMI) have a poor in-hospital outcome primarily due to an increased incidence of death and heart failure. The susceptibility to diabetic complications is partially determined by genetic factors. Haptoglobin (Hp) phenotype is related to the risk of developing both microvascular and macrovascular complications of diabetes. We prospectively tested the hypothesis that Hp phenotype is related to the outcome of pts with diabetes presenting with AMI.

Methods: We enrolled 798 consecutive pts with AMI. The primary endpoint was 30-days mortality or heart failure. Infarct size was determined by echocardiography on day 2-3. Multivariate logistic regression was used to calculate adjusted ORs and to test for interaction between Hp phenotype and diabetes with respect to the primary endpoint.

Results: At 30-days, 237 patients (29.7%) died or developed heart failure. Multivariate logistic regression identified a strong protective effect of Hp 1-1 phenotype with regard to the primary endpoint of 30-days mortality or heart failure (OR for Hp 1-1 vs Hp 2-1 or Hp 2-2; 0.43, 95% CI 0.22-0.84, P = 0.01). The interaction between Hp phenotype and diabetes was highly significant in unadjusted (P = 0.008) and adjusted (P = 0.005) logistic regression models. In a stratified analyses, Hp 1-1 phenotype was not related to outcome among pts without diabetes (Adjusted OR 0.78; 95% CI 0.33-1.82, P = 0.56). By contrast, Hp 1-1 phenotype was associated with a strong protective effect with regard to the primary endpoint among pts with diabetes (Adjusted OR 0.21; 95% CI 0.07-0.62, P = 0.005). Among pts with diabetes, Hp 1-1 was also associated with a smaller infarct size compared with Hp 2-1/2-2 (echocardiographic wall motion score index 1.70 ± 0.03 vs 1.40 ± 0.07, P = 0.005), whereas in pts without diabetes there was no significant difference. Conclusion: Hp phenotype may be an important genetic marker that affects the outcome of patients with diabetes and AMI. Better understanding of the mechanism underlying Hp-effect may help to reduce morbidity and mortality in patients with diabetes in the setting of AMI.