

**PRE-SURGICAL LOADING OF ORAL D-RIBOSE
IMPROVES CARDIAC INDEX IN PATIENTS
UNDERGOING “OFF” PUMP CORONARY ARTERY
REVASCULARIZATION**

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Patients with stable coronary artery disease or patients presenting with an acute myocardial infarction may undergo revascularization using an “off” cardiopulmonary bypass procedure. “Off” cardiopulmonary bypass has gained acceptance; however, patient selection must be considered to minimize risks of mortality and morbidity. The role that myocardial metabolism may play in these patients continues to attract interest. Due to this, ribose, a natural occurring pentose sugar, was investigated in this patient population undergoing revascularization. Forty-four adult patients with ischemic coronary artery disease were enrolled in this trial. A least a third of the patients had sustained an acute myocardial infarction prior to presentation and pre-operative ejection fractions ranged between 30-72%. All patients underwent “off” bypass coronary revascularization with 20 patients consuming no pre-operative metabolic substrate and the remaining 24 patients were supplied with oral D-ribose pre-operatively. Cardiac indices were measured at baseline and post-operatively. All patients were matched according to peri-operative cardiovascular volumes, cardiac medications, and risk assessment scores (STS criteria). The ribose treated patients demonstrated a 49% greater increase in cardiac indices compared to controls ($p < 0.028$). This data implies that when using an “off” cardiopulmonary bypass coronary artery revascularization procedure, the pre-loading of oral D-ribose may improve cardiac function post-operatively. Further multi-center verification of this data needs to be explored.

Abstract Presentation at:

Federation of American Societies for Experimental Biology
San Diego, CA
April 2-6, 2005