

Perkowski D, S Wagner, A Marcus, J St. Cyr. D-Ribose improves cardiac indices in patients undergoing "off" pump coronary arterial revascularization. *J Surg Res* 2007;137(2):295.

Patients (pts) with coronary artery disease (CAD) may undergo revascularization using an "off" pump cardiopulmonary bypass (OPCAB) technique. OPCAB has gained acceptance with proper pt selection, including pts presenting with acute myocardial infarction (MI). Increased morbidity and mortality rates may occur, especially with acute MI pts, in which lower tissue levels of adenosine triphosphate (ATP) may play a key role. Ribose (R), a natural occurring pentose sugar, has demonstrated not only accelerated myocardial ATP return of depressed energy levels, but also functional benefits in pts with cardiovascular disease. Could R offer an added benefit in pts undergoing OPCAB, including pts presenting with acute MI? One hundred forty-three adult pts (M-#109, F-#34), mean age 69 ± 10 years (range: 41-90 years), with CAD, including pts with acute MI, underwent OPCAB. Mean pre-operative ejection fraction was $56 \pm 11\%$ (range: 15-82%). Sixty-six of the 143 pts presented with an acute MI and underwent OPCAB (30 pts < 21 days, 36 pts > 21 days). All pts received peri-operative oral R supplementation. Cardiac indices (CI) were measured both pre- and post-operatively. OPCAB with supplemental R resulted in no peri-operative deaths, no post-operative MIs and a 43% greater increase in CI post-operatively 295 compared to baseline. OPCAB procedures performed at this institute have historically demonstrated a 13% improvement in CI postoperatively. Results from this single center trial revealed that OPCAB with R can aid in CI with low mortality and morbidity, including pts presenting with acute MI. A multi-center trial is needed to further support these findings; however, these preliminary findings argue for the peri-operative use of R with OPCAB as a potential approach for coronary arterial revascularization.