**DOES BMI OR METABOLIC SYNDROME PREDICT OUTCOME AFTER MINIMALLY INVASIVE CARDIAC SURGERY?**

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Obese and underweight conventional cardiac surgery patients have been associated with morbidity and mortality. Obesity contraindicates minimally invasive cardiac surgery (MICS), though it is not clear if BMI or metabolic syndrome (MetSyn) accurately predict outcomes following MICS. We sought to investigate whether BMI or MetSyn is associated with complications and mortality in patients undergoing MICS single valve surgery (MICS-sV).We retrospectively reviewed 546 consecutive patients undergoing MICS-sV from 01/2000-04/2011. Patients were grouped by pre-operative BMI: underweight (BMI≤18.5), normal-mildly obese (18.5to≤35), and obese (>35). Patients with ≥3 of the following pre-operative characteristics were classified as having MetSyn: blood pressure ≥130/85; fasting glucose ≥100mg/dL; BMI>35; HDL<40mg/dL(male), <50mg/dL(female); triglycerides ≥150mg/dL. Patients in the underweight, normal-mildly obese, and obese groups had average BMI 17.8±0.5, 25.3±3.6, and 37.3±1.7, respectively. There was no difference of in-hospital complications or 30-day mortality. Obese patients did not have increased long-term mortality compared to the normal-mildly obese group. MetSyn patients did not experience increased mortality. However, underweight patients showed higher mortality compared to other groups (log-rank p=0.0002), see figure. After adjusting for age and gender, having BMI<18.5 was shown to be an independent predictor of mortality (HR: 3.6; p=0.007). High BMI or MetSyn are not associated with complication or mortality after MICS-sV. This could be partly due to preoperative screening for MICS that excludes patients with high BMI or MetSyn. Further investigations should aim to demarcate a cut-off value for BMI where MICS is contraindicated. Cachectic patients, however, are at increased risk after cardiac surgery even when approached via MICS.