**A PROPENSITY SCORE MATCHED STUDY OF ON PUMP AND OFF PUMP CORONARY ARTERY BYPASS SURGERY**

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**Objective:** We matched isolated coronary artery bypass surgery (CABG) on- and off-pump patients using a propensity score and compared the clinical outcomes, complications, and re-admissions in two groups for any significance.

**Method:** Patients were identified from medical records utilizing CMS isolated CABG criteria detailed in hospital 30-day all cause mortality index and eligible on- and off-pump CABG patients were matched using propensity score in age, gender, height, weight, BMI, hypertension, diabetes, CVA, previous MI, smoker, and ejection fraction (EF). Clinical outcomes on length of stay, ICU days, mortality, clinical complications for stroke, complications, 30 days all cause re-admissions were compared for statistical significance (STATA Inc.). Observed and expected (O/E) mortality index was compared between on- and off-pump CABG patients after propensity score matching.

**Results:** There were either emergency, urgent, or elective procedures (n=375) in both groups (53% on-pump CABG patients) with higher emergent off-pump cases (p=0.042). We matched propensity score using age (mean 63±10 years), height (mean 65±6 inches), weight (mean 191±45 lbs.), BMI (mean 31±7 kg/m2), sex (50% female), pre-surgery EF (44±17%), hypertension, diabetes, smoker, previous MI and CVA in two groups, which yielded n=125 in each group. In these two matched groups, we found stroke as significant in on-pump group (p<0.004), no differences in ICU days (6±8 vs. 6±8; p=0.834), and the numbers of vessels bypassed were significantly higher (p<0.004) in off-pump group (1-8 grafts) vs. on-pump group (1-5 grafts). O/E mortality index was slightly higher in on-pump group compared to off-pump group (p<0.05). There were no differences in re-hospitalization when compared within 30 days of the hospital discharge.

**Conclusion:**Off-pump CABG showed parallel outcomes when compared to on-pump surgery in a propensity-score matched study. Numbers of higher conduits in off-pump CABG showed less post-operative stroke.