Quality Improvement Interventions Decreases Mortality after Cardiac Surgery

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Background: The aim of the study was to evaluate the impact of newly appointed intensivist and introduction of quality improvement program by intensivist-directed team on the outcomes of patients after cardiac surgery.

Method: We performed an observational cohort study with historical controls in an eight-bed Cardiac Surgical ICU in a tertiary university medical center. The study period included from January 2005 to December 2010. For analysis we grouped patients into three periods, First period, before appointment of intensivist, from 2005-2006, Second period 2007-2008, after appointment of intensivist and beginning of implementation of the interventions, and Third period, 2009-2010, after interventions implementation. Quality improvement interventions include intermediate intensity glucose control protocol, sepsis treatment protocol and guidelines for the prevention of intravascular catheter-related infection. Also was introduced continuous RRT (renal replacement therapy) under full supervision of intensivist. In the third period we introduced computerized clinical information system.

Results: There were 1633, 1690 and 1543 patients investigated in each period respectively. Patient data were collected from the department's database. There was no significant difference in the mean of the standard and logistic scores between the 3 groups. Unadjusted in-hospital mortality decreased significantly from 6.37% (104 patients) to 3.3% (51 patients) in the Third period ($p<0.01$ See Tab 1), and ventilation time decreased significantly during the 3 periods as well ($p<0.01$).

Conclusion: Appointment of an intensivist-directed team model and introducing Quality improvement interventions were associated with decreased mortality and shorter postoperative ventilation time after cardiac surgery.