total operative times. Postoperative data included the frequency of hyperglycemic patients, occurrence of PO morbidities and mortality. All hyperglycemic patients received insulin infusion adjusted to achieve RBG level of 126–179 mg/dl.

Results: All patients had significantly higher postoperative RBG levels compared to preoperative levels. Forty-three patients were hyperglycemic, while 57 patients were considered normoglycemic. Throughout ICU and hospital stay, 31 patients developed morbidities and 4 patients died with significantly higher frequency of additional morbidities and mortalities in hyperglycemic versus normoglycemic patients. There was positive significant correlation between the frequency of PO morbidities and mortality and extent of PO hyperglycemia, aortic clamping, CPB and total operative times. ROC curve and regression analyses showed that the extent of PO hyperglycemia, aortic clamping, CPB and total operative times are the significant predictors for morbidities and mortalities.

Conclusion: PO hyperglycemia showed deleterious effects on outcome of CABG patients manifested as increased frequency of morbidities and mortalities during ICU and hospital stay and the extent of hyperglycemia could be considered as independent predictor of worsened outcome. The applied management policy allowed reduction of blood glucose levels without inducing hypoglycemia with subsequent improved outcome.

73. Custodiol versus blood cardioplegia in pediatric cardiac surgery

Ebtehal Qulaissi, Osman Al-Radi, Rajab Debes

Introduction: Cardioplegia is a solution used to arrest and protect the heart during open cardiac repair with the use of cardiopulmonary-bypass. Two types of cardioplegia were evaluated. Blood cardioplegia and HTK crystalloid cardioplegia known as Custodiol.

Objectives: To evaluate the efficacy of myocardial protection with antegrade intermittent oxygenated blood cardioplegia in comparison to a single dose of Custodiol in pediatric cardiac surgery.

Methods: A retrospective cohort study was performed between November 1st, 2013 and June 30th, 2014. Fifty-two patients underwent congenital heart procedure at King Abdul-Aziz University Hospital with the use of cardiopulmonary-bypass and cardioplegia. Forty-two received blood cardioplegia and ten received Custodiol. Data were collected from operative reports, electronic and paper charts. Statistical analysis was done using Pearson-test for continuous data and Kruskal–Wallis-test for categorical data. P-Value of 0.05 was considered significant.

Results: Patients in the Custodiol group experienced longer duration of cardiopulmonary-bypass time (median value of 84 versus 77.5 min), aortic clamping time (63 versus 50.5 min) and total operation time (175 versus 144 min), compared to the Blood group. The duration of mechanical ventilation was longer in the Custodial group, 72 versus 48 h in the Blood group ($p = 0.016$). The incidence of post-operative arrhythmia requiring treatment was also higher in Custodiol group, 50% versus 12% in the Blood group ($p = 0.02$). Low output syndrome, acute kidney injury and death were not statistically significantly different between two groups.

Conclusions: Custodiol may have inferior myocardial protection compared to blood cardioplegia in children undergoing cardiac surgery. A randomized comparison is warranted.

74. Bone density in heart transplanted patients in Kingdom of Saudi Arabia

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Background: Osteopenia and osteoporosis are prevalent in heart transplant candidates. Early, rapid bone loss is a well documented complication of steroid administration after heart transplantation. Purpose of our study was to determine incidence of osteopenia and osteoporosis in heart transplant candidates and heart transplanted patients and association with demographics characteristics, vitamin D deficiency, renal and thyroid function and long-term use of corticosteroids and immunosuppressive drugs.

Methods: This is a non-randomized, retrospective, observational study. Medical files of all consecutive heart transplanted patients since the beginning of 2009 until August 2013 were reviewed.

Results: Pre-transplant bone mineral density data (BMD) were available in 63 heart transplant recipients; 54 and 32, respectively, also had 1- and 2-years post-transplant BMD data. Pre-transplant lumbar spine (LS) osteopenia or osteoporosis was 35% and 8% compared with 30% and 3% in femoral neck (FN). We found significant decrease in pre-transplant BMD compared with BMD data 1 year after heart transplantation in LS (1.034 ± 0.17 vs. 0.994 ± 0.13; $p < 0.001$) and FN (0.951 ± 0.15 vs. 0.879 ± 0.139; $p < 0.001$), respectively. There were no significant changes in BMD after 2 years compared with data with 1 year BMD in LS ($p = 0.98$) and FN ($p = 0.11$), respectively. BMD in LS and FN were significantly lower in female (0.92 ± 0.157 vs. 1.06 ± 0.163, $p = 0.009$ and 0.869 ± 0.11 vs. 0.985 ± 0.147, $p = 0.017$) despite younger age (26 ± 10 vs. 39 ± 13 year, $p < 0.001$). Vitamin D deficiency is highly representative in the Saudi population (69% of recipients have severe deficiency, level < 25 nmol/L). One year after transplantation 94% of patients are on Vitamin D3 supplement and 91% on Calcium supplement. Despite reduction of severe VITD deficiency to only 8.6% we have significant progress of osteopenia and osteoporosis 1 year after HTx. We have registered 100% use of corticosteroids 1 year after HTx.