

29. No association between MTHFR C677T polymorphism and congenital heart disease in Saudi Arabian population

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Congenital heart diseases (CHD) are the most common birth defects in the world. It is a major cause of childhood mortality and morbidity worldwide with about 7 per 1000 live birth. Studies suggest that Methylenetetrahydrofolate reductase (MTHFR) polymorphism C677T has been associated with congenital malformation; this common missense mutation in the MTHFR gene may reduce enzymatic action, and may be involved in the etiology of congenital heart defects (CHD), but the evidence remains inconclusive. The aim of this study is to determine whether this association exists in the Saudi Arabian population.

Method: DNA sequencing was used to detect genotype MTHFR C677T in 75 CHD patients and 100 ethnically similar controls. The type of cardiac defect was diagnosed by cardiovascular specialist and confirmed by echocardiographic.

Results: The distribution of the MTHFR 677C >T SNP genotypes and alleles in both CHD and control groups were 70.0% CC, 26.0% CT, 4.0% TT in cases and 70.8% CC, 25.4% CT, 3.8% TT in controls. The T allele frequency was 17.0% in cases and 16.5% in controls. The difference between genotypes and alleles was not statistically significant between controls and the CHD groups.

Conclusion: We did not find sufficient evidence for an association between MTHFR C677T genotype and congenital heart disease in Saudi Arabian population. We agree that the sample size is a limitation to our above conclusions.

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30. Predictors for prolonged mechanical ventilation in children undergoing cardiac surgery

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Introduction: Prolonged mechanical ventilation (PMV) has been associated with deleterious clinical outcomes. Characteristics of the patient and various peri-operative factors can predispose individuals to PMV leading to prolonged hospitalization, increasing costs, morbidity and mortality. We investigated specific predictors of PMV in children who underwent cardiac surgery in a tertiary care centre in Riyadh, Saudi Arabia.

Method: Retrospective analysis of 413 pediatric cardiac surgeries performed during a 12 months period. Cases

were divided in group-A (MV >7 days) and group-B (MV <7 days). Patient demographics, pre-operative, intra-operative and post-cardiac surgery variables including complications were reviewed. Continuous and Categorical variables were compared using Student's *t*-test and Chi-square. Univariate and multivariate analyses were performed to identify predictors of PMV. **Results:** In total, 47 (11.4%) of the 413 children had PMV post-cardiac surgery. Group-A patients were younger [mean age: 7.6 months (SD 17.1) vs 23.4 months (SD 29.3), $p < 0.0001$], and lighter [mean weight: 4.5 kg (SD 3.7) vs 9.4 kg (SD 6.5), $p < 0.0001$] than Group-B. The mean duration of mechanical ventilation in Group-A was 21.6 days (SD 16.2) compared to 1.8 days (SD 1.5) in Group-B ($p < 0.0001$). On univariate analyses, significant predictors of PMV included younger age, low body weight, higher surgical risk category, delayed sternal closure, prolonged bypass and cross-clamp times, higher frequency of acute kidney injury, presence of surgical wound and blood stream infections, pneumonia, and UTI [$p < 0.0001$ for all analyses]. On multivariate analysis, younger age, low body weight, and higher surgical risk category and delayed sternal closure were significant for PMV.

Conclusion: Post-operative infections and delayed sternal closure proved to be the most important factors determining the duration of ventilation. Aggressive efforts to ameliorate infection would facilitate successful early extubation after surgery.

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31. Left ventricular dysfunction after patent ductus arteriosus (PDA) closure

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Background/Aim: Left ventricular (LV) dysfunction is a known complication after patent ductus arteriosus (PDA) occlusion. However, only limited studies with small number of patients and shorter duration of follow up were published. The study objective is to evaluate the effect of PDA occlusion on LV systolic function (LV-SFx).

Methods: A retrospective study conducted from January 2003 till December 2013. Our cardiac database was used to identify all patients who underwent either surgical or catheter occlusion for PDA in this study period. Our echocardiography (echo) data base was used for echo review. From M-Mode recordings, LV dimensions were measured and Fractional Shortening (FS) derived before and after the intervention to assess LV-Sfx. The endpoint of follow-up was either a normalization of LV-Sfx defined by FS equal to/or more than 28% or reaching one year of follow-up after the intervention in patients