ABSTRACT FROM CURRENT LITERATURE

Comparison of Posterolateral Thoracotomy and Video-Assisted Thoracoscopic Clipping for the Treatment of Patent Ductus Arteriosus in Neonates and Infants

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This study was designed to compare the long-term clinical outcomes and costs between video-assisted thoracic surgery (VATS) and posterolateral thoracotomy (PT) in neonates and infants. This study enrolled 302 patients with isolated patent ductus arteriosus (PDA) from January 2002 to 2007 and followed them up until April 2010. A total of 134 patients underwent total VATS (VATS group), and 168 underwent PDA closure through PT (PT group). The two groups were compared according to clinical outcomes and costs. The demographics and preoperative clinical characteristics of the patients were similar in the two groups. No cardiac deaths occurred, and the closure rate was 100% successful in both groups. The operating, recovery, and pleural fluid drainage times were significantly shorter in the VATS group than in the PT group. Statistically significant differences in length of incision, postoperative temperature, and acute procedure-related complications were observed between the two groups. The cost was 1,150.3 ±221.2 for the VATS group and 2415.8 ±345.2 for the PT group ($P < 0.05$). No cardiac deaths or newly occurring arrhythmias were detected in either group during the follow-up period. Statistically significant differences in the rate of residual shunt and scoliosis were observed between the two groups. The left ventricular end-diastolic diameter and the pulmonary artery diameter could be restored to normal in the VATS group but not in the PT group. The study confirmed that VATS offers a minimally traumatic, safe, and effective technique for PDA interruption in neonates and infants.

Adjunctive Oral Methylprednisolone in Pediatric Acute Pyelonephritis Alleviates Renal Scarring

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Objective: To determine if glucocorticoids can prevent renal scar formation after acute pyelonephritis in pediatric patients.

Methods: Patients younger than 16 years diagnosed with their first episode of acute pyelonephritis with a high risk of renal scar formation (ie, inflammatory volume > 4.6 mL on technetium-99m–labeled dimercaptosuccinic acid scan [DMSA] or abnormal renal ultrasonography results) were randomly assigned to receive either antibiotics plus methylprednisolone sodium phosphate (1.6 mg/kg per day for 3 days [MPD group]) or antibiotics plus placebo (placebo group) every 6 hours for 3 days. Patients were reassessed by using DMSA 6 months after treatment. The primary outcome was the development of renal scars.

Results: A total of 84 patients were enrolled: 19 in the MPD group and 65 in the placebo group. Patient characteristics were similar between the 2 groups, including the acute inflammatory parameters and the initial DMSA result. Renal scarring was found in 33.3% of children treated with MPD and in 60.0% of those who received placebo ($P < .05$). The median cortical defect volumes on follow-up DMSA were 0.0 mL (range: 0–4.5 mL) and 1.5 mL (range: 0–14.8 mL) for the MPD and placebo groups, respectively ($P < .01$). Patients in the MPD group experienced faster defervescence after treatment than the placebo group.

Conclusions: Adjunctive oral MPD therapy reduced the occurrence and/or severity of renal scarring after acute pyelonephritis in these hospitalized children who had a high risk of renal scar formation.

Clinical pulmonary infection score to diagnose ventilator associated pneumonia in children

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Background: There is a need to validate and suggest easy clinical method for diagnosis of ventilator-associated pneumonia (VAP) in developing countries.

Objectives: To validate the use of simplified Clinical Pulmonary Infection Score (CPIS) for the diagnosis of VAP.

Design: Prospective study.

Setting: Pediatric intensive care unit of a tertiary care teaching hospital.

Subjects: 30 children receiving mechanical ventilation for more than 48 hours and with simplified CPIS > 6. underwent flexible bronchoscopy to obtain bronchoalveolar lavage which was analyzed quantitatively. Colony counte"10^4cfu/mL was considered reference standard for definite VAP.

Results: Of the five variables used for simplified CPIS, only patient's temperature (P=0.013) and PaO2/ FiO2 ratio were significant (P<0.001) to differentiate the presence of definite VAP. Patients with definite VAP (BAL colony count e"10^4cfu/mL) had CPIS of 8.4 while in no definite VAP group it was 6.4 (P= 0.007). CPIS of 8 was found to have sensitivity of 80%, specificity 80%, PPV 86.9%, NPV 70.5% and accuracy 80%. The area under Receiver operating characteristic curve of CPIS against reference standard was 0.81± 0.069 (P=0.001).

Conclusion: Simplified CPIS is useful in patients on mechanical ventilation to diagnose ventilator-associated pneumonia.

Key words: *Bronchoscopy, Clinical pulmonary infection score, India, Mechanical ventilation, Ventilator-associated pneumonia.*

Whole Body Cooling in Newborn Infants with Perinatal Asphyxial Encephalopathy in a Low Resource Setting

A Feasibility Trial, Niranjan Thomas, Koshy C George, Santhanam Sridhar, Manish Kumar, Kurien Anil, Kuruvilla And Atanu Kumar Jana

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Objective: To determine the feasibility and safety of whole body cooling in newborn infants with perinatal asphyxial encephalopathy in a low resource setting.

Design: Feasibility trial.

Setting: Tertiary care perinatal centre.

Subjects: Infants born at ³ 35 weeks gestation with perinatal asphyxia were included in the study.

Interventions: Infants were cooled to a rectal temperature of 33±0.5°C for 72 hours using cloth-covered ice-gel packs. Vital parameters were monitored continuously.

Outcome measures: The primary outcome was the achievement of target temperature within 1 hour of initiation of treatment and maintaining the target temperature for 72 hours. Adverse events and possible complications of hypothermia were the secondary outcomes measured.

Results: Twenty infants were included in the study. The mean time taken to achieve target rectal temperature was 52±25 minutes. The mean rectal temperature during cooling was 32.9±0.11ºC. The target temperature could be maintained for 72 hours without difficulty in all babies. Adverse events observed during cooling were thrombocytopenia (25%), sinus bradycardia (25%), deranged bleeding parameters (20%), aposteatonecrosis (15%), hyperglycemia (15%), hypoglycemia (10%), hypoxemia (5%), life-threatening coagulopathy (5%) and death (5%). Shivering was noted in many of the babies, especially in the initial phase of cooling.

Conclusion: Whole body cooling in term infants with perinatal asphyxia is achievable, safe and inexpensive in a low-resource setting.