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Abstract from Current Literature

Missed congenital heart disease in neonates

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Objectives: The purpose of this study was to determine the incidence of missed congenital heart disease in neonates in the state of Wisconsin leading to death or readmission during the first 2 weeks of life.

Design: Wisconsin hospitalization and death records were reviewed from 2002 to 2006. Only those neonates discharged home after birth without a cardiac or major non-cardiac diagnosis were considered. Wisconsin hospital records identified those neonates readmitted during the first 2 weeks of life with a diagnosis of heart disease using International Classification of Diseases, 9th Revision (ICD-9) codes. Wisconsin death records also identified patients who died within the first 14 days of life who had a diagnosis of heart disease using International Classification of Diseases, 10th Revision (ICD-10) codes. Adverse events were attributed to congenital heart disease if the diagnosis was a left-sided obstructive lesion or a cyanotic heart defect. Other adverse events were attributed to heart disease if no other major diagnosis was present and the data suggested an intention to treat. The 114 Wisconsin hospitals, which delivered 340 203 babies during 2002-2006, were stratified into quartiles based on the total number of deliveries to determine if there was a difference in incidence of missed congenital heart disease based on hospital birth size.

Results: Congenital heart disease led to death or rehospitalization during the first 2 weeks of life in 14 out of 345 573 births (1 : 24 684) in Wisconsin between 2002 and 2006. Coarctation of the aorta and hypoplastic left heart syndrome were the most common diagnosis. There did not appear to be a difference in the incidence of missed diagnosis of congenital heart disease based on the number of deliveries performed at the birth hospital.

Conclusions: Death or readmission events in neonates under 2 weeks of age because of a missed diagnosis of congenital heart disease occurred in 1 : 24 684 neonates in the state of Wisconsin between 2002 and 2006. Critical left sided obstructive lesions were the most common cause of these events.

Prevention of retinopathy of prematurity in preterm infants through changes in clinical practice and SpO(2) technology.

Castillo A, Deulofeut R, Critz A, Sola A.

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To identify whether pulse oximetry technology is associated with Aim: Inborn decreased retinopathy of prematurity (ROP) and laser treatment. Methods: infants <g who had eye exams were compared at two centres in three 1250 periods. In Period 1, SpO(2) target was e”93% and pulse oximetry technology was the same in both Centres. In Period 2, guidelines for SpO(2) 88-93% were implemented at both centres and Centre B changed to oximeters with signal extraction technology (SET(®)) while Centre A did not, but did so in Period 3. One ophthalmology department performed eye exams using international criteria. In 571 newborns Results: <g, birth weight and gestational age were 1250 similar in the different periods and centres. At Centre A, severe ROP and need for laser remained the same in Periods 1 and 2, decreasing in Period 3-6% and 3%, respectively. At Centre B, severe ROP decreased from 12% (Period 1) to 5% (Period 2) and need for laser decreased from 5% to 3%, remaining low in Period In a large group of inborn infants 3. Conclusion: <g, a change in 1250 clinical practice in combination with pulse oximetry with Masimo SET, but not without it, led to significant reduction in severe ROP and need for laser therapy. Pulse oximetry selection is important in managing critically ill infants.

Locally Made Ready-to-Use Therapeutic Food for Treatment of Malnutrition: A Randomized Controlled Trial

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Objective: To evaluate the effectiveness of a locally made ready-to-use therapeutic food (RUTF) in decreasing mild to moderate malnutrition.

Design: A randomized open label, controlled trial.

Setting: Pre-schools run by the Department of Community Health in Kaniyambadi administrative block, Vellore, India; duration of follow-up – 3 months from the date of recruitment.

Participants: Pupils aged 18-60 months with Weight-for-Age £2 SD.

Interventions: A locally produced energy-dense supplement (RUTF), and the current standard of care [teaching caregivers how to make a fortified cereal-milk supplement called High Calorie Cereal Milk (HCCM)].

Main outcome measures: Increase in weight-for-age status; increase in levels of plasma zinc, vitamin B12, serum albumin and haemoglobin.

Results: The Mean (SD) weight gain at 3 months was higher in the RUTF group: RUTF (*n*=51): 0.54 kg; (SE = 0.05; 95% CI = 0.44 – 0.65) *vs* HCCM (*n*=45): 0.38 kg; (SE = 0.06; 95% CI = 0.25 – 0.51), *P* = 0.047. The weight gain per kilogram of body weight was directly proportional to the severity of malnutrition.

Conclusions: Community-based treatment showed weight gain in both groups, the gain being higher with RUTF

Health-related Quality of Life of Thai children with HIV infection: a comparison of the Thai Quality of Life in Children (ThQLC) with the Pediatric Quality of Life Inventory version 4.0 (PedsQL 4.0) Generic Core Scales

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Purpose: The purpose of this study was to evaluate the reliability and validity of the Thai Quality of Life in Children (ThQLC) and compare it with the Pediatric Quality of Life Inventory (PedsQL 4.0) in a sample of children receiving long-term HIV care in Thailand.

Methods: The ThQLC and the PedsQL 4.0 were administered to 292 children with HIV infection aged 8-16 years. Clinical parameters such as the current viral load, CD4 percent, and clinical staging were obtained by medical record review.

Results: Three out of five ThQLC scales and three out of four PedsQL 4.0 scales had acceptable internal consistency reliability (i.e., Cronbach's alpha >0.70). Cronbach's alpha values of each scale ranged from 0.52 to 0.75 and 0.57 to 0.75 for the ThQLC and the PedsQL 4.0, respectively. Corresponding scales (physical functioning, emotional well-being, social functioning, and school functioning) of the ThQLC and the PedsQL 4.0 correlated substantially with one another (r = 0.47, 0.67, 0.59 and 0.56, respectively). Both ThQLC and PedsQL 4.0 overall scores significantly correlated with the child's self-rated severity of the illness (r = -0.23 for the ThQLC and -0.28 for the PedsQL 4.0) and the caregiver's rated overall quality of life (r = 0.07 for the ThQLC and 0.13 for the PedsQL 4.0). The overall score of the ThQLC correlated with clinical and immunologic categories of the United State-Centers for Disease Control and Prevention (US-CDC) classification system (r = -0.12), while the overall score of the PedsQL 4.0 significantly correlated with the number of disability days (r = -0.12) and CD4 percent (r = -0.15). However, the overall score from both instruments were not significantly different by clinical stages of HIV disease. A multitrait-multimethod analysis results demonstrated that the average convergent validity and off-diagonal correlations were 0.58 and 0.45, respectively. Discriminant validity was partially supported with 62% of validity diagonal correlations exceeding correlations between different domains (discriminant validity successes). The Hays-Hayashi MTMM quality index was 0.61. Multivariate regression analysis revealed that the ThQLC physical functioning scale provided unique information in predicting child self-rated severity of the illness and overall quality of life beyond that explained by the PedsQL 4.0 in Thai children with HIV infection.

Conclusions: We found evidence in support of the reliability and validity of the ThQLC and the PedsQL 4.0 for measuring the health-related quality of life of Thai children with HIV infection.

Changing Mortality in Congenital Heart Disease

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Objectives: This study sought to characterize temporal trends in all-cause mortality in patients with congenital heart disease (CHD).

Background: Historically, most deaths in patients with CHD occurred in early childhood. Notable advances have since been achieved that may impact on mortality trends.

Methods: We conducted a population-based cohort study of patients with CHD in Quebec, Canada, from July 1987 to June 2005. A total of 8,561 deaths occurred in 71,686 patients with CHD followed for 982,363 patient-years.

Results: The proportion of infant and childhood deaths markedly declined from 1987 to 2005, with a reduction in mortality that exceeded that of the general population. Distribution of age at death transitioned from a bimodal to unimodal, albeit skewed, pattern, more closely approximating the general population. Overall, mortality decreased by 31% (mortality rate ratio: 0.69, 95% confidence interval [CI]: 0.61 to 0.79) in the last (2002 to 2005) relative to the first (1987 to 1990) period of observation. Mortality rates decreased in all age groups below 65 years, with the largest reduction in infants (mortality rate ratio: 0.23, 95% CI: 0.12 to 0.47). In adults 18 to 64 years, the mortality reduction (mortality rate ratio: 0.84, 95% CI: 0.73 to 0.97) paralleled the general population. Gains in survival were mostly driven by reduced mortality in severe forms of CHD, particularly in children (mortality rate ratio: 0.33, 95% CI: 0.19 to 0.60), and were consistent across most subtypes.

Conclusions: Deaths in CHD have shifted away from infants and towards adults, with a steady increase in age at death and decreasing mortality.