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ABSTRACT FROM CURRENT LITERATURE

The diagnosis of brain tumors in children: a guideline to assist healthcare professionals in the assessment of children who may have a brain tumor

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Brain tumours are the commonest solid tumour in children. Children with brain tumours are frequently unwell for months prior to diagnosis. A prolonged period between symptom onset and diagnosis is associated with increased morbidity. To develop an evidence-based clinical guideline to support healthcare professionals in the identification, assessment and investigation of children presenting with symptoms and signs that could be due to a brain tumour. A systematic literature review with a meta-analysis and cohort study provided the guideline evidence base. A multi-disciplinary workshop and Delphi consensus voting were used to translate the evidence into a clinical guideline. The results of the literature review and cohort study have been previously published.20 healthcare professionals and parents participated in the workshop. 77 statements were generated detailing the presenting features of childhood brain tumours, factors that could be used to discriminate brain tumours from other less serious conditions and possible referral pathways for children with brain tumours. 156 healthcare professionals agreed to participate in the Delphi process; 112 completed the first round and 88 completed all three rounds (attrition rate 21%). 64 statements reached consensus. The final guideline comprises 76 recommendations advising on the symptomatology of childhood brain tumours, assessment of children who may have a brain tumour and recommendations for selection for and timing of central nervous system imaging. Implementation of this guideline may support clinicians in the identification and timely imaging of children with brain tumours. This may reduce the morbidity currently experienced by many children with brain tumours.

Role of Gut Microbiota in Early Infant Development

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Early colonization of the infant gastrointestinal tract is crucial for the overall health of the infant, and establishment and maintenance of non-pathogenic intestinal microbiota may reduce several neonatal inflammatory conditions. Much effort has therefore been devoted to manipulation of the composition of the microbiota through 1) the role of early infant nutrition, particularly breast milk, and supplementation of infant formula with prebiotics that positively influence the enteric microbiota by selectively promoting growth of beneficial bacteria and 2) oral administration of probiotic bacteria which when administered in adequate amounts confer a health benefit on the host. While the complex microbiota of the adult is difficult to change in the long-term, there is greater impact of the diet on infant microbiota as this is not as stable as in adults. Decreasing excessive use of antibiotics and increasing the use of pre- and probiotics have shown to be beneficial in the prevention of several important infant diseases such as necrotizing enterocolitis and atopic eczema as well as improvement of short and long-term health. This review addresses how the composition of the gut microbiota becomes established in early life, its relevance to infant health, and dietary means by which it can be manipulated.

Nasal continuous positive airway pressure (CPAP) versus bi-level nasal CPAP in preterm babies with respiratory distress syndrome: a randomized control trial

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Objective: To evaluate the clinical course, respiratory outcomes and markers of infl ammation in preterm infants with moderate respiratory distress syndrome (RDS) assigned from birth to nasal

continuous positive airway pressure (NCPAP) or bi-level NCPAP.

Methods: A total of 40 infants with a gestational age (GA) of 28–34 weeks (<35 weeks' GA), affected by moderate RDS, were considered eligible and were randomised to NCPAP (group A; n=20, CPAP level=6 cm H2O) or to bi-level NCPAP (group B; n=20, lower CPAP level=4.5 cm H2O, higher CPAP level=8 cm H2O), provided with variable flow devices. Inflammatory response was the primary outcome; serum cytokines were measured on days 1 and 7 of life. Length of ventilation, oxygen dependency, need for intubation and occurrence of air leaks were considered as secondary outcomes.

Results: Infants showed similar characteristics at birth (group A vs group B: GA 30.3±2 vs 30.2±2 weeks, birth weight 1429±545 vs 1411±560 g) and showed similar serum cytokine levels at all times. Group A underwent longer respiratory support (6.2±2 days vs 3.8±1 days, p=0.025), longer O2 dependency (13.8±8 days vs 6.5±4 days, p=0.027) and was discharged later (GA at discharge 36.7±2.5 weeks vs 35.6±1.2 weeks, p=0.02). All infants survived. No bronchopulmonary dysplasia (BPD) or neurological disorders occurred.

Conclusions: Bi-level NCPAP was associated with better respiratory outcomes versus NCPAP, and allowed earlier discharge, inducing the same changes in the cytokine levels. It was found to be well tolerated and safe in the study population.