BP ($r=-0.57$ m/s; 95% CI -0.67 to -0.45). cIMT in five-year-olds was $0.61\mu\text{m}$ greater per 1 mmHg increased maternal BP.

Eight studies explored the impact of fetal growth restriction (FGR) or small for gestational age (SGA), and three explored prematurity. FGR infants had a greater rise in brPWV between 1 week and 6 months old compared to appropriately grown infants (1.5 vs 0.9cm/s increase, $p=0.03$); however, aPWV and SIx did not differ between groups. One-week-old SGA infants had higher weight-adjusted aIMT (383 ± 163 vs $256\pm 43\mu\text{m/kg}$, $p\leq 0.001$) and SIx (2.0 ± 1.7 vs $1.1\pm 0.4\beta/\text{kg}$, $p=0.005$) than appropriately grown infants. Prematurity was associated with increased aortic stiffness in 2/3 studies: for example, AIx values were 5% higher (95% CI: 2%-8%) in 11-year-olds born ≤ 25 weeks. However, in six-year-olds, SIx and cIMT were similar in term and preterm (<27 weeks) cohorts.

Conclusions Studies included used diverse methods and different ages of participants, and inconsistent definitions for SGA/FGR were applied. Nevertheless, the perinatal environment appears to influence offspring arterial structure and function in preadolescent children. Future research should aim to establish reference values for arterial stiffness-related measures in preadolescent children using consistent methodologies, in order to allow earlier, targeted clinical and public health interventions focused on those at the highest long-term cardiovascular risk.

Association of Paediatric Palliative Medicine

784 HEALTHCARE PROFESSIONALS' EXPERIENCES OF THE BARRIERS AND FACILITATORS TO COMMUNITY PAEDIATRIC PAIN MANAGEMENT AT END-OF-LIFE

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Background Inadequate pain management in community paediatric palliative care is common. Evidence to inform improved pain management in this population is limited.

Objectives To explore the barriers and facilitators to paediatric community-based pain management for infants, children and young people at end-of-life as perceived by healthcare professionals.

Methods Semi-structured qualitative interviews were conducted with 29 healthcare professionals; 12 nurses, five GPs, five consultants and registrar doctors, two pharmacists and five support therapists working in primary, secondary or tertiary care in the UK and involved in community end-of-life care of 0–18-year-olds. The data corpus was analysed using an inductive thematic analysis.

Results Seven themes emerged from the data: parents' abilities, beliefs and wellbeing; working relationships between families and healthcare professionals, and between healthcare teams; healthcare professionals' knowledge, education and experience; health services delivery; nature of pain treatment; and paediatric-specific factors. Across themes, the concepts of partnership working between families and healthcare professionals, and within healthcare teams, and sharing expertise were prevalent.

Conclusions It is important that healthcare professionals and parents work together, and that mutual trust is built up through two-way conversations. Community healthcare professionals would benefit from education from experienced multi-disciplinary teams to effectively manage paediatric pain at end-of-life and prevent emergency hospice or hospital admissions, particularly during the COVID-19 pandemic.

British Paediatric Neurology Association

785 MANNITOL VS 3% HYPERTONIC SALINE IN CHILDREN WITH INTRACRANIAL HYPERTENSION: REVIEW OF THE CURRENT EVIDENCE

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Background Hyperosmolar agents have been used for a long time in managing patients with increased intracranial pressure due to different aetiologies. Mannitol and 3% hypertonic saline (HTS) are the most used agents in paediatric patients;

Abstract 785 Table 1

Author/date	Country	Study design	Underlying condition	Outcome
Rameshkumar 2020	India	Open label RCT (n=57)	CNS infection	HTS group was more responsive with less mean ICP and higher mean CCP CPP than baselines. HTS group had less mortality, duration of ventilation, PICU stays and better outcomes at discharge.
Kumar 2019	India	Open label RCT (n=30)	Severe TBI	No difference was demonstrated between both groups as regards ICP, CPP, ventilation, duration of PICU, mortality, and outcome.
Roumeliotis 2016	Canada	Retrospective observational (n=16)	Severe TBI	Equal results shown in both groups with Less ICP in HTS group after second bolus.
Decourcey 2013	USA	Retrospective multicentre cohort study (n=1,632)	Cerebral oedema due to DKA	Equal ICU admission and duration of ventilation in both groups. However, higher mortality rate demonstrated in HTS treated group ($p<0.37$)
YILDIZDAS 2005	Turkey	Retrospective observational (n=67)	Infection, HIE, ICH, Metabolic	Less mortality and duration of coma in HTS group.
Vats 1999	USA	Retrospective pilot study (n=43)	Closed Head Injuries, Intracranial neoplasm, fulminant hepatic failure, viral encephalopathy	Higher CPP than baseline in HTS group

TBI: Traumatic brain injury; CNS: Central nervous system.

however, there hasn't been enough evidence to favour one agent over the other.

Objectives Compare both the efficacy and side effects of mannitol vs 3% hypertonic saline in paediatric patients with intracranial hypertension caused by traumatic or non-traumatic aetiologies.

Methods Inclusive searches of electronic databases were conducted to identify scientific studies directly comparing the effect of mannitol against 3% hypertonic saline in children with increased intracranial tension. Search keywords included 'mannitol', 'hypertonic', 'saline', 'cerebral', 'edema', 'intracranial', 'pressure', and 'hypertension'. Articles that met the inclusion criteria were identified and analysed.

Results We identified two randomized controlled trials, four retrospective studies, and two systematic reviews. The primary outcome studied was the improvement in intracranial pressure (ICP) and cerebral perfusion pressure (CPP), as well as mortality, duration of ventilation, and duration of coma.

In most of the included studies, HTS achieved greater reduction in ICP and increase in CPP compared to mannitol. HTS was associated with lower mortality, shorter duration of ventilation, and shorter PICU stays when compared to mannitol in children with traumatic and non-traumatic encephalopathies.

Only one study showed controversial results. This was a retrospective study done in patients with cerebral oedema due to diabetic ketoacidosis (DKA), which showed a higher mortality in the HTS group as compared with the mannitol group (3.7% and 2.6% respectively). However, this result was not statistically significant ($p < 0.34$).

Conclusions According to the reviewed literature, HTS appears to achieve a greater reduction in ICP than mannitol with better clinical outcomes. However, there is paucity of high-quality evidence to support these findings. Larger multicentre trials are still needed to develop guidelines regarding which agent is preferred for use in the treatment for increased intracranial tension over the other.

International Child Health Group

786

REFLECTIONS FROM A GLOBAL HEALTH OUT OF PROGRAMME EXPERIENCE (OOPE): PERSPECTIVES FROM TWO UK-BASED PAEDIATRIC TRAINEES

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Background Undertaking global health work can be an incredibly rewarding part of a clinician's career. Well-designed OOPE's offer invaluable learning opportunities to benefit the global healthcare community, the individual health-worker and the wider NHS.

Objectives To reflect on learning from the design, planning and implementation of a global health capacity building project, with focus on a collaborative approach as well as personal and clinical development for individual volunteers to bring back to their careers in the NHS.

Methods Between September 2019 and March 2020, Tropical Health and Education Trust (THET) recruited two paediatric registrar and one non-clinical programme and evaluation consultant to design and deliver a Health Education England-funded paediatric capacity-building project in Lusaka, Zambia.

The project was collaborative and was co-designed by the volunteers and the local hospitals in which they were working.

The team worked locally with the paediatric teams in two 'district level' hospitals, Zambian Paediatric Association (ZPA) and Zambian Ministry of Health to understand the local healthcare needs, current ways of working and the social, economic and political context for change. Advice was also sought from the wider paediatric global health community (including RCPCH Global Links). Once local needs and priorities for paediatric care were identified, the team worked with local medical staff to design and deliver a bespoke one-day ABCDE training course using a 'train-the-trainer' approach to upskill local healthcare workers in the assessment and stabilisation of unwell children.

This project was unusual in global health as it involved non-clinical professionals in volunteer roles on the frontline. Having a mixed project team supported the clinical members to develop their management and leadership skills while planning and delivering a quality improvement project – these are essential leadership skills for NHS clinicians delivering change in complex systems.

Results Key learning:

Collaboration is key, both within local systems and across professions. This project has highlighted several factors that lead to effective design and sustainable implementation of change:

- Working closely with local and national clinical and political stakeholders from project conception allows for a high degree of buy-in giving local ownership increasing the success of the project. Hands-on clinical work alongside frontline healthcare workers fosters strong relationships to support change.
- Involving a wider range of clinical and non-clinical professionals in health care (both in the NHS and abroad) improves project design and delivery and allows for skills development.
- The global health community is becoming increasingly collaborative, with a desire to share learning and prevent duplication of work.

The volunteer clinicians found the project very valuable in terms of personal, clinical and leadership/managerial development. These are transferrable skills that are invaluable for working in the NHS.

Conclusions The learning and personal development opportunity provided by designing and delivering a change project within global health is considerable for NHS colleagues. Taking a collaborative approach to health care with local systems, the wider voluntary sector and across different professions can only improve the outcomes for both the global health care community, the NHS and the individuals involved.

Child Protection Special Interest Group

787

EMERGENCY DEPARTMENT ATTENDANCES BY CHILDREN THOUGHT TO BE AT HIGH RISK OF EXPLOITATION

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Background Safeguarding children is an essential part of clinical care provision. As part of normal practice staff refer to