Methods We prospectively measured compliance with the guideline in a randomly selected subset. After doing the first cycle, we presented the results locally along with regular education of PICU medical and nursing staff. We compared the total number of blood tests requested and their costs per patient-day in three-day blocks pre-intervention (October 2019) and post-intervention (January 2020).

Results Prospective audit data showed compliance with the guideline in 8 of 24 (33.3%) patient-days studied. The total number of tests increased from 179 to 191 (% increase) in the post-intervention period. Patient-days had increased from 24 to 39 (% increase) in the corresponding period.

The proportion of patients needing level 3 and 4 care was higher in the post-intervention period (48.7% vs. 41.6%). The average number of blood tests requested per patient-day decreased from 7.45 to 4.89 post-intervention, a 34.3% reduction. The average cost per patient-day decreased from £36.6 to £24 post-intervention, a 34.4% cost saving. The savings over 12 months would be £51,458.4 based on 4084 patient-days in 2019. There were no adverse events reported due to lack of blood results.

Conclusions Blood testing rates can be safely reduced in critically ill children.

137 USING EXTUBATION CHECKLIST IN NICU TO IMPROVE THE SUCCESSFUL EXTUBATION RATE

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Background Mechanical ventilation is a cornerstone of managing respiratory failure in preterm infants. Whilst its role to improve the survival rate has been proven, it can also result in unintended harm.1 2

It can increase the risk of developing bronchopulmonary dysplasia, sepsis, neurological injury, and retinopathy of prematurity. Because of that, clinicians aim to extubate preterm infants as early as possible.3 4

Given that approximately two-thirds of infants born before 29 weeks’ gestation require intubation, an extubation checklist was implemented at the neonatal intensive care unit at Leeds General Infirmary hospital and St James hospital trying to improve the successful extubation rate.

Objectives To identify if using the extubation checklist has helped to reduce the rate of unsuccessful extubation in preterm infants in neonatal units at Leeds general infirmary hospital and St James hospital.

Methods

A retrospective cohort study of extremely preterm infants (<27 weeks gestational age) or ELBW infants (birth weight <1000 g) requiring mechanical ventilation during the period 01/01 – 30/06 in 2013 and 2018 (pre and post-implementation of the extubation list).

Successful extubation is defined as not requiring reintubation for 72 hours post-extubation.

Badger system was used to search for all patients who were admitted to LGI & St James neonatal unites during the 2 periods of 01/01/2013 – 30/06/2013 and 01/01/2018 - 30/06/2018.

Notes for the identified patients were requested from the archive.

Dates of extubation and re-intubation attempts were obtained from the notes.

Inclusive criteria
Abstracts

139 DO NEURAMINIDASE INHIBITORS IMPROVE OUTCOMES IN CRITICALLY UNWELL CHILDREN WITH INFLUENZA?

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Background Influenza is a common seasonal acute respiratory viral illness. Children, especially those with co-morbidities, are at risk of complications and ICU admission. No specific guidelines have been formulated about starting neuraminidase inhibitors (NAI) in critically ill children with influenza, but the Health Protection Agency and American Academy of Pediatrics have both stated that antiviral therapy should be initiated as soon as possible in this cohort.

Objectives We aimed to evaluate the evidence supporting the early initiation of NAI in critically ill children with influenza, by conducting a literature search to establish whether NAI improved survival and shortened intensive care admissions in children critically ill with influenza.

Methods We searched the literature for articles on the use of NAI treatment in critically unwell children or children in PICU diagnosed with influenza. We excluded articles with adult patients only, or with a mixture of adults and children where the results were not stratified by age. We also excluded articles with children in outpatient settings, or hospitalised on low-dependency units.

Results Out of 369 articles (Cochrane Library: 2, PUBMED: 328, NHS Evidence: 39), twelve studies published between 2010 and 2017 were included, seven of which were cohort studies (Level 3 evidence) and five case series (Level 4 evidence), with a total of over 7,000 critically ill children with influenza worldwide.

Six cohort studies compared mortality in children receiving NAI and children who did not: five of these demonstrated a trend towards decreased mortality with the use of NAI, and one showed no difference between treated and untreated groups. Only one study reached statistical significance, with p = 0.01 for association of NAI treatment with survival. We noted that the two studies which reported on NAI-related adverse events reported none.

There is some evidence in our data that early NAI within 48 hours of symptom onset and/or admission has additional benefits compared to late NAI, although the largest cohort study did not demonstrate this effect.

The studies included here had limitations. Patient cohorts were heterogeneous, with some having had RT-PCR confirmed influenza and others just a clinical diagnosis. Few studies reported on concurrent treatment with antibiotics or steroids. Several studies stressed that patients receiving NAI were more likely to have co-morbidities and very severe influenza requiring mechanical ventilation at baseline, compared to patients who were not started on NAI.

Conclusions The current evidence on the use of NAI in critically ill children with influenza is weak (Level 3), but trends toward improved survival. The trend of improved survival is particularly salient if NAI treatment is initiated within 48 hours of symptom onset. This may mean starting oseltamivir on clinical suspicion of influenza, without waiting for a laboratory confirmation of the diagnosis, to avoid delay.

140 EARLY POSTNATAL MATERNAL DEPRESSIVE SYMPTOMS MAY PREDICT BEHAVIOURAL PROBLEMS AND AUTISM SYMPTOMS IN TODDLERS

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Background Maternal depression has been studied as a risk factor for child development and found to be associated with less secure attachment, worse cognitive and behavioural outcomes in childhood, and a possible increased risk of autism spectrum disorder (ASD). Despite the wealth of research investigating postnatal parental depression, most studies have small sample sizes, assess parental mood during later infancy, use a dichotomous measure of parental depression, or examine distant child behavioural and emotional outcomes, with limited focus on ASD.

Objectives This study examined the association between early maternal postnatal depressive symptoms and offspring’s mental health in a large cohort of term and preterm toddlers.

Methods Participants were 509 children enrolled in the Developing Human Connectome Project; 412 (80.9%) were born at term, and 97 (19.1%) were born preterm (<37 weeks gestation). Maternal postnatal depressive symptoms were assessed with the Edinburgh Postnatal Depression Scale (EPDS) at term. Children were followed-up at a median corrected age of 18.4 months (range 17.3 – 24.3) for neurodevelopmental assessment. Primary outcome measures were toddlers’ Child Behaviour Checklist 1½-5 Total (CBCL) and Quantitative Checklist for Autism in Toddlers (Q-CHAT) scores. Secondary outcome measures were the CBCL internalising and externalising sub-scores. Cognition was assessed with the Bayley Scales of Infant and Toddler Development – Third Edition (Bayley-III). Multiple imputation (n=40) was carried out to account for missing data. Data were analysed with multiple linear regression, including clinical and socio-demographic confounders.

Results Higher maternal EPDS scores were associated with toddlers’ higher CBCL total scores (B=0.93, 95% CI 0.43–1.44, p<0.001, $t^2=0.05$) and higher Q-CHAT scores (B=0.27, 95% CI 0.03–0.52, p<0.05, $t^2=0.01$). Higher maternal EPDS