Paediatric Clinical Leaders: Service Planning, Provision and Best Practice

771 WHAT IMPACT HAS COVID-19 HAD ON PAEDIATRIC WORKFORCE AND SERVICES?

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10.1136/archdischild-2021-rcpch.189

Background Child health services in the UK had to respond rapidly to the challenge of the COVID-19 pandemic, with no precedence or playbook. There was large variation in how services were affected, depending on local incidence rates, location, and the systems they were working in.

There was a lack of data about how services were coping, what types of pressures they were under, and how things are changed over time. We launched a project to collect and report data about the impact of COVID-19 on child health services. The first phase ran from April to July 2020 and the second from December 2020 to February 2021.

This project collected data on a weekly basis to track trends and patterns, highlight service pressures, and help identify pinch points.

Objectives 1. To capture a picture of how COVID-19 is affecting paediatric services throughout winter.

2. To provide members with information to help with workforce and service planning and recovery.

3. To ensure RCPCH members feel listened to and supported, and provided with a way of alerting us to issues in their service.

4. To make the responsible bodies in each of the UK nations aware of the problems facing paediatric services throughout winter.

Methods We asked representatives, such as the paediatric clinical lead, to respond on behalf of their Trust or Health Board on a weekly basis. The first phase covered 12 weeks from April to July 2020 and the second phase covered 14 weeks from December 2020 to February 2021.

Respondent were asked to submit data about 'the 7 days up to 08:00 on [date of Friday in the current collection week]'. Questions were answered as compared to 'normal' levels of staffing and capacity i.e., the same week in previous years. Some questions were changed over the data collection period in response to changing priorities.

Results Response rate per week varied from 30% to 53%.

In the first phase of collection (Spring 2020), up to 10% of all paediatric staff were not available to work (e.g., shielding). Up to 22% of junior paediatric medical staff (on the tier 1 rota) were redeployed to adult services, and up to 46% of community child health trainees and 14% of community career grade staff were also redeployed within paediatrics.

In the second phase (Winter 2020–21), 16% of paediatric staff were reported absent due to stress and up to 28% of services reported trainee redeployment to adult services. We also found that paediatric inpatient beds occupied with children admitted due to a mental health issue had doubled from 6% in 2019 to 12% in 2020.

Conclusions The paediatric workforce has been working intensely and beyond their usual scope for the past year. Prior to the pandemic, paediatric services and workforce already could not meet the demand for care. Redeployment and staff

shortages due to the pandemic have therefore posed further challenges on an already stretched system. Staff and services must be supported to restore and recover.

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772 AUDIT OF THE MANAGEMENT OF TERM BABIES AT RISK OF HYPOGLYCAEMIA

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10.1136/archdischild-2021-rcpch.190

Background BAPM introduced new guideline in April 2017 on identification and management of neonatal hypoglycaemia in the full term infant. This was adopted in our Level 2 Neonatal unit in October 2018. We wanted to assess if we were adhering to it.

Hypoglycaemia is the most common manifestation of failure of metabolic adaptation in the newborn period. It can have devastating consequences if we do not manage appropriately. It is associated with increased rates of executive and visual motor dysfunction (*Christopher et al*). It is one of the reasons for claims in NHS (*Howden et al*). We need to be aware of the various causes of hypoglycaemia in term babies and have a low threshold to screen for sepsis.

We wanted to ensure that we are providing Intensive breast feeding support and using 40% dextrose gel (200mg/kg) as the initial management. Guideline suggest two different values for target blood glucose in hyperinsulinism i.e. 3mmol/L in first 48hrs and 3.5mmol/L after that.

Objectives

- To look into number of term babies admitted to the neonatal unit with hypoglycaemia
- To understand the causes of hypoglycaemia in term babies in our unit
- To see if the management was as per the BAPM guideline

Methods

- Duration: 6 months (Nov 2018 to Apr 2019)
- Study population: Term Babies at risk of Hypoglycaemia
- Of all the babies admitted, 17 met the inclusion criteria

Results

- 2/3rd of the babies were infant of diabetic mother
- 88% of the babies had feeding regime documented
- 100% of the babies had temperature checked
- 100% of the babies had pre-second feed blood glucose and temperature checked
- 100% of the mothers had support with feeding & hand expression
- 100% of babies receive 10–15ml/kg/feed 3hrly over first 24hrs
- 88% of the time the blood glucose was measured by gas machine
- Only 18% of the babies needed IV fluids (n=3)
- Only 12% (n=2) of the babies had blood glucose <1 as pre-second feed blood glucose

Important findings

- Only 53% of the babies had feeding commenced within one hour after birth
- 50% of the babies did not receive 200mg/kg of 40% Dextrose gel
- 25% of the babies in blood glucose 1–1.9 mmol/L group and 50% in severe hypoglycaemia group (blood glucose <1 mmol/L) were not screened for hypoglycaemia
- Sepsis was not considered in 37% of the cases
- Documentation (feeding regime, indication for blood glucose monitoring) needs improvement
- Hyperinsulinism was considered in 100% of the cases
- 100% of the severe hypoglycaemia group had blood glucose checked within 30min

Conclusions Overall there was good adherence to the guideline

Areas of improvement were identified in particular relating to starting feeds within an hour after birth for high risk cases and the use of 40% dextrose gel. These issues are dealt in the postnatal ward. So, we presented the data to the Maternity governance team for the education of midwives.

Hypoglycaemia screening and sepsis was not considered in few cases so we have put the guideline as the lesson of the week with reminders at the safety huddle. We are planning to re-audit in 6–12 months

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INVASIVE FUNGAL INFECTION AMONG OUTBORN BABIES ADMITTED TO A TERTIARY CARE NEONATAL UNIT IN KOLKATA – A CASE SERIES

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10.1136/archdischild-2021-rcpch.191

Background Invasive fungal infections are a major cause of morbidity & mortality in neonatal intensive care units. Invasive fungal infection can have catastrophic consequences especially in the premature and extremely low birth weight babies. *Candida* species are mostly incriminated and some times difficult to treat with conventional antifungals even in presence of in-vitro sensitivity. Candidemia carries a mortality rate exceeding 25% in most of the studies.

Objectives To describe a series of invasive fungal sepsis, we encountered at our NICU in June 2019 and their epidemiology, clinical pattern, management difficulties, short term complications and outcome.

Methods Type of study: Retrospective hospital based case series.

Period of study: One month (June 2019)

Total no of cases: 6

Results

Clinical & laboratory features:

Out of 40 cases of neonatal admission, invasive fungal infection were present in 6 (15%), all caused by *Candida tropicalis*. Most of the babies had late onset sepsis except one who had early onset fungal sepsis. Among them preterm were 4 (66.7%), Low birth weight were 4 (66.7%) and 4 (66.7%) were male.

Mode of delivery – normal delivery in 4 (66.7%) & LSCS in 2 (33.3%)

3 babies were born vaginally following premature rupture of membrane & history of birth asphyxia were present in 2 babies

Clinical features documented were abdominal distension-4 (66.7%), sclerema -2 (33.3%) bilious vomiting -4 (66.7%), hepatosplenomegaly-2 (33.3%), shock - 3 (33.3%), gastro intestinal bleeding -2 (33.3%), hematuria -1 (16.7%), meningitis -1 (16.7%) and neonatal jaundice in all the cases.

Laboratory features showed sepsis screen with blood culture positivity, conjugated hyperbilirubinemia and thrombocytopenia in all cases. Hyperglycemia in 4 (66.7%) and recurrent hypoglycaemia in 1 (16.7%). Urine showed budding yeast in 2 (33.3%) and ultrasound confirmed renal involvement in 1 (16.7%).

Treatment & outcome:

All the babies received supportive treatment. All except 2 received broad spectrum antibiotics for more than 7 days. We have treated 4 babies successfully with liposomal amphotericin B. Antifungals were given for 3 weeks. Most of them except one received blood product transfusion.

One baby developed drug induced hepatitis which resolved spontaneously after withdrawal of the drug and some developed mild fall in hemoglobin, none had derangement of kidney function.

In our study, 2 babies died [mortality rate- 33%] within 48 hours of NICU admission despite our best effort and they had received Fluconazole empirically. Their blood culture later grew *Candida tropicalis* sensitive to both Fluconazole and Amphotericin B.

Conclusions Babies with fungal sepsis are difficult to manage. Treatment is mostly delayed as the definite diagnosis is most often difficult to establish and the drug is very toxic precluding its empirical use. We present six cases which highlight our own observation in clinical practice including four babies who were treated successfully with liposomal amphotericin B. Invasive candidiasis can be detrimental in neonates. Clinical suspicion, early diagnosis and prompt and complete treatment is the key to success.

Paediatric Educators' Special Interest Group

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PAEDIATRIC TRAINEES' TRAINING EXPERIENCES DURING THE COVID-19 PANDEMIC: A NATIONAL SURVEY

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10.1136/archdischild-2021-rcpch.192

Background There is a paucity of published data exploring the opinions of UK paediatric trainees as to the impact of COVID-19 on their training and education.

Objectives This study aims to explore paediatric trainees' education and training experiences during this period.

Methods An online survey open to all UK paediatric trainees between May and August 2020 captured quantitative data alongside qualitative data by critical incident technique open questioning. Positive and negative training experiences related to