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AUDIT OF THE USE OF FIBRINOGEN IN A TERTIARY NICU 2018–2020

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Background Fibrinogen is an integral part of the coagulation cascade. Fibrinogen disorders in the neonatal period may be congenital (rare) or acquired. Neonatal hypofibrinogenemia is typically associated with no or mild bleeding, although severe haemorrhage may occur. In this unit (Level 3 NICU, 8,500 deliveries/year), fibrinogen concentrate is the recommended treatment for hypofibrinogenemia. There is a paucity of evidence available regarding the optimal management of neonatal hypofibrinogenemia and the administration of fibrinogen concentrate is a high-risk activity that carries the risk of thrombosis.

Objectives To compare the use of fibrinogen concentrate in our unit, to the 2016 BCSH and local guidelines and the product literature.

Methods Neonates who received fibrinogen concentrate between 1/1/2018 and 15/10/2020 were included. Audit approval was obtained, and data collected retrospectively from the electronic health records. The guidelines used as the audit

standard were 'Guidelines on transfusion for fetuses, neonates and older children' 2016 BCSH guidelines, a local neonatal transfusion policy and the Summary of Product Characteristics for Riastap. Data collected included the indication for treatment and fibrinogen level.

Results Thirty-five neonates received fibrinogen during this period (table 1). Only one case was due to congenital hypofibrinogenemia, the remainder were acquired. In the 31 episodes with active bleeding, the most common type was mild skin/mucosal bleeding (28%), followed by pulmonary (26%) and intracranial (13%).

Conclusions The administration of fibrinogen in this audit, often occurred with fibrinogen levels >1 g/L and in the absence of active haemorrhage. This may suggest the excessive use of fibrinogen concentrate. However, the evidence to guide the treatment of hypofibrinogenemia in neonates is limited. A recent study highlighted the role of thrombocytopenia and coagulopathy as associated risk factors for severe haemorrhage. These were not evaluated in this audit and may have prompted fibrinogen administration in some cases.

The results were presented to the department and an action plan was devised to reduce the use of fibrinogen. Re-auditing is warranted, and further studies are required to evaluate the optimal management of neonatal hypofibrinogenemia.

Quality Improvement and Patient Safety

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USE OF SALBUTAMOL FOR BRONCHIOLITIS IN INFANTS UNDER THE AGE OF ONE: A QUALITY IMPROVEMENT PROJECT EVALUATING THE PRACTICES IN AN NHS EMERGENCY DEPARTMENT

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Abstract 810 Table 1 The use of fibrinogen in neonates

	2018	2019	2020 (10 months)	total
Number of patients	9	18	8	35
Number of fibrinogen doses	12	29	10	51
Number of patients receiving > 1 dose	2	3	1	6
Number of repeated doses	3	11	2	16
Pre-transfusion fibrinogen level (g/L)	N/A: 1 <0.5: 1 0.5–0.99: 3 1–1.49: 4 ≥1.5: 3	N/A: 6 <0.5: 1 0.5–0.99: 9 1–1.49: 9 ≥1.5: 4	N/A: 0 <0.5: 0 0.5–0.99: 6 1–1.49: 3 ≥1.5: 1	N/A: 7 <0.5: 2 0.5–0.99: 18 1–1.49: 16 ≥1.5: 8
Gestational age in weeks, range (median)	30–39 (34)	25–41 (38)	30–41 (34)	25–41 (37)
Neonatal death	22% (2/9)	28% (5/18)	13% (1/8)	23% (8/35)
Compliance to Criterion 1: hypofibrinogenemia (<1g/L)	33% (4/12)	41% (12/29)	60% (6/10)	43% (22/51)
Compliance to criterion 2: active bleeding	58% (7/12)	66% (19/29)	50% (5/10)	61% (31/51)
Compliance to criteria 1+2: hypofibrinogenemia and active bleeding	17% (2/12)	17% (5/29)	40% (4/10)	22% (11/51)
Compliance to dose of fibrinogen	75% (9/12)	83% (24/29)	80% (8/10)	82% (41/51)

Background The National Institute for Health and Care Excellence (NICE) guidelines do not currently recommend the use of salbutamol in infants under the age of 2 years due to lack of evidence of effectiveness and concerns about harm. It has been estimated that only 17–27% of UK clinical practice may be compliant with these guidelines. In February 2020 the Joint Royal Colleges Ambulance Liaison Committee (JRCALC) changed their guidelines for managing respiratory distress in children, emphasizing that salbutamol is rarely effective in children under 1 year of age.

Objectives We conducted a quality improvement project assessing the use of pre-admission nebulised salbutamol in infants under 12 months brought in by ambulance to an English NHS Emergency Department (ED), before and after the change to the JRCALC guidelines.

Methods The audit compared two periods: November 2019; and November/December 2020. Two months were required in 2020 to increase the number of patients included. Electronic patient records for November 2019 were retrospectively audited. Inclusion criteria included: all children under 1 year old brought in by ambulance with an initial presentation documented as respiratory distress and/or a final ED discharge diagnosis of bronchiolitis, upper respiratory tract infection, lower respiratory tract infection or viral induced wheeze. We recorded whether these children were treated with nebulised salbutamol before arrival. We then developed