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THE ACCURACY TRANSCUTANEOUS BILIRUBINOMETRY DURING AND AFTER PHOTOTHERAPY IN PRETERM INFANTS

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Background and aims Transcutaneous bilirubinometry (TcB) is a quick and painless method to guide the management of neonatal jaundice. Few studies have conducted on the effectiveness of TcB in preterm infants under phototherapy. The aim of the present study to examine the accuracy of TcB measurements during and after phototherapy in preterm infants.

Methods A prospective cohort study performed in the Coombe Women and Infants University Hospital, Dublin, Ireland. Preterm infants (23⁺⁰ to 36⁺⁶ weeks of gestation) born between June 2017 and May 2018, were enrolled in the study if they developed significant jaundice requiring phototherapy. TcB was measured from exposed (TcBu) and covered (TcBc) areas within an hour of obtaining total serum bilirubin (TsB) samples. Correlation between TcB (TcBu and TcBc) and TsB were examined during and after phototherapy.

Result This study consisted of 196 jaundiced preterm infants (mean birth weight(±SD) 1605 g(±638), mean gestational age (±SD) 30.4(±3.2) weeks of gestation). We obtained 327 simultaneous measurements during the phototherapy phase and 137 pairs of readings after the discontinuation of phototherapy. There were weak correlations between TsB and TcB during phototherapy (r: 0.33, P <0.0001 in covered, r: 0.39, P<0.0001 in uncovered areas). However, post-phototherapy measurements showed a strong correlation between TsB and TcB (r: 0.86, P <0.0001).

Conclusion Measurement of TcB using a bed-type device is a reliable method to estimate bilirubin level in preterm infants after discontinuation of phototherapy. It cannot, however, be used as a substitute for TsB measurement during phototherapy in preterm infants

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SGA EXTREMELY AND LOW PREMATURE INFANTS: FEATURES OF THE NEONATAL PERIOD

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Newborns with SGA are at risk for postnatal adaptation disorders and increased neonatal morbidity. This problem is of particular relevance in extremely and low premature infants.

Aim To evaluate the features of the neonatal period in extremely and low premature infants with SGA.

Materials and methods 42 premature infants with a gestational age of 28.0 [26.0; 30.0] weeks were examined: 18 - with SGA (group 1), 24 - with anthropometric parameters corresponding to the gestation period (group 2). The research program included an assessment of the clinical and metabolic indicators of postnatal adaptation, neonatal morbidity, and anthropometric dynamics by a corrected age of 1 month. Statistical processing of the results: the frequency of symptoms (%), the median with the definition of the interquartile interval, the nonparametric criterion χ^2 .

Results The median mass and length at birth in children of group 1 corresponded to 650.0 [610.0; 932.0] g and 34.0 [31.0; 36.0] cm, 2 groups - 1090.0 [866.0; 1393.0] g (p <0.01) and 36.0 [33.0; 40.5] cm (p <0.05). The course of the neonatal period in extremely and low premature infants is characterized by postnatal adaptation disorders. In the case of SGA, the differences relate to the frequency of intrapartum asphyxia (group 1 - 88.9%, group 2 - 58.3%, p <0.05), acute adrenal insufficiency (44.4% and 16.6%, p <0.05), pathological hyperbilirubinemia (38.9% and 8.3%, p <0.05), edema (33.3% and 8.3%, p <0.05). All patients had pathology of the neonatal period. In SGA were more often recorded intraventricular hemorrhages with the formation of occlusive hydrocephalus (group 1 - 33.3%, group 2 - 8.3%, p <0.05), sepsis (33.3% and 4.2%, p <0.05), congenital pneumonia (72.2% and 33.3%, p <0.05) and bronchopulmonary dysplasia (50.0% and 16.7%, p <0.05). However, in patients with SGA, the disease was more severe: intensive therapy was needed in 18 patients of group 1 and 24 in group 2. The duration of intensive therapy in preterm patients with SGA was significantly higher than in group 2: 28.0 [14.5; 37.5] and 8.0 [6.0; 10.7] days (p <0.01). By the corrected age of 1 month, the indicators of mass and length of the body in the very premature with SGA remained unsatisfactory: 3,380.0 [2,773.0; 3,627.0] g (-2.3 SD) and 50.0 [44.0; 52.5] cm (-1.9 SD).

Conclusion Prematurity and SGA have an adverse potentiating effect on the course of the neonatal period.

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NUTRITION AUDIT- ARE WE LOSING THE PLOT?

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Background and aims Growth measurement and documentation is an essential part of practice in neonatology, as regular measuring of growth parameters leads to early recognition of possible poor growth. This means action can be taken promptly, reducing long term morbidity and mortality.

The Royal College of Paediatrics and Child Health have produced guidelines on growth measurement, with NICU in RJMH having additional guidelines specific to the unit.

Our aim was to audit the compliance with the guidelines in RJMH, and to find ways of improving practice.

Methods We have audited growth charts on BadgerNet of 58 babies, which was the total number of inpatient babies during the month of November. This was done as a retrospective audit.

Results 100% of babies audited had birth weight plotted on a correct chart with EDD marked on the chart. We attributed this to the fact that RJMH uses BadgerNet, which is an electronic system that automatically generates a growth chart and plots the birth weight. Birth head circumference was plotted on 69% of the babies.

Out of the babies that resided in the unit over 2 weeks, 90% had a second weight noted by 2 weeks, and 72% had repeat head circumference noted within 2 weeks. Only 28% of babies had their weight plotted twice weekly thereafter, and 22% of babies had weekly head circumference plotted.

Conclusions Our conclusion from the audit is that initial growth parameters are performed well, however ongoing