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SOLUBLE TRANSFERRIN RECEPTOR AS A MARKER OF IRON STORES IN FULLTERM AND PRETERM NEWBORNS AND INFANTS

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Soluble transferrin receptor (sTfR) is a form of tissue transferrin receptor circulating in blood, which is responsible for donation of iron into the cells. The aim of the study was evaluation of sTfR serum concentration in newborns and infants born at term and preterm regarding to classic markers of iron stores like iron and ferritin concentrations and blood counts. The study group was composed of 117 newborns and infants between 1- 21 weeks of chronological age. The children were divided into three groups according to gestational age. Group I was composed of preterms with a gestational age of 24-31 wk (n=32), group II - preterms with a gestational age of 32-37 wk (n=42), group III - newborns and infants born at time (n=43). Our results revealed that fullterm newborns and infants had higher ferritin but lower sTfR concentration than preterms ($p < 0.02$), specially born before 32 weeks of gestation. The latter had also significantly higher reticulocyte count. The sTfR concentration correlated negatively with gestational age, birth weight, iron and ferritin serum concentrations, and correlated positively with reticulocyte count. On the basis of our investigation it can be concluded that serum sTfR concentration may reflect iron requirement during intensive erythropoiesis as well as its intensity.

intravascular fluid shifts in critical patients who are prone to hemodynamic instability.

Methods: Pediatric critical care nurses are responsible for set-up, initiation, maintenance and troubleshooting of CRRT. They are intricately involved in clinical decision-making and adjustments based on laboratory results and fluid balance. CRRT is utilized on approximately 25 patients annually in the pediatric intensive care unit.

Standardized orders allow nurses to adjust citrate and calcium chloride based on laboratory values. Nurses calculate total fluids (including intermittent medications, nutrition, flushes and continuous drips) for 24-hour period and adjust fluid removal rate based upon determined net fluid goal.

Nurses are also responsible for CRRT machine intra-operatively during orthotopic liver transplantation and other high-risk surgeries. Patients with severe hepatic disease requiring liver transplantation are at risk for acute kidney injury. These patients receive large amounts of volume during operative period and aggressive management of fluid status appears to improve outcomes. Maintaining even or negative fluid balance may be beneficial in a 2009 adult study.

Results: Care of the patient in the PICU and management of the CRRT machine is the responsibility of the bedside nurse. All charge nurses and ECMO certified nurses are also expected to remain competent in CRRT management.

Conclusion: Protocol- driven CRRT program in a high-volume critical care setting can be successfully run by nurse professionals in an efficient and safe manner.

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NURSE RESPONSIBILITIES AND CLINICAL DECISION-MAKING WHEN CARING FOR CRITICALLY ILL PEDIATRIC PATIENTS REQUIRING CONTINUOUS RENAL REPLACEMENT THERAPY

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Background: Continuous renal replacement therapy (CRRT) is an invaluable treatment therapy for critically ill pediatric patients suffering from acute renal failure. CRRT is easily initiated with less

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UNTIL WHEN DOES CREATINAEMIA IN ELBW INFANTS STILL REFLECTS MATERNAL RENAL FUNCTION?

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Introduction: Creatinaemia remains a widely used clinical tool to estimate renal glomerular filtration capacity. However at birth, creatinaemia still reflects

maternal renal function. We therefore wanted to evaluate until when maternal creatinaemia still affects neonatal creatinaemia in ELBW infants.

Methods: Retrospective data analysis of maternal (within 24 h of delivery) creatinaemia (mg/dl) and neonatal creatinaemia in the first 8 postnatal days in ELBW infants (< 1 000 g). Postnatal data were compared with maternal creatinaemia (paired Wilcoxon, correlation, Bland-Altman).

Results: In an dataset of 155 neonates (weight = 810, 330-1000 g, age = 27, 23-33 weeks), 80 neonates were linked with maternal creatinaemia (median 0.8, range 0.41-1.6) at delivery. Median postnatal creatinaemia was not significantly different from maternal observations on day 1 (0.78) and displayed a progressive, significant (Wilcoxon) increase up to day 3 (1.085) with subsequent significant decrease from day 4 (1.075) until day 8 (0.81). Correlations between maternal and neonatal creatinaemia became weaker ($r = 0.72, 0.37, 0.21$) with increasing age and were no longer significant after day 3. Bland-Altman fit was perfect (mean 0.02, SD 0.19) on day 1, with a subsequent weakening on day 2 and 3 (mean -0.23, SD 0.39, -0.28, SD 0.53).

Conclusions: Maternal creatinaemia is the most relevant covariate of neonatal creatinaemia in the first 3 days of life. In these first postnatal days, creatinaemia does not yet reflect neonatal renal function and therefore, cannot yet be used to assess glomerular filtration rate.

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PARTICIPANT FEEDBACK FROM THE JAPANESE VERSION OF THE NEONATAL RESUSCITATION PROGRAM (NEONATAL CARDIOPULMONARY RESUSCITATION: NCPR COURSE)

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Background: The Japanese version of the neonatal resuscitation program (Neonatal Cardiopulmonary Resuscitation: NCPR course) was implemented in July 2007 sponsored by the Japanese Society

of Perinatal and Neonatal Medicine (JSPNM). Although the number of participants is increasing, the effects and limitations of the NCPR course remain incompletely understood.

Objective: To ascertain the prevalence of the NCPR course in Japan and assess its effects and limitations.

Methods: The total number of NCPR courses and participants was compiled by the JSPNM from July 2007 to December 2009. Participant feedback after attendance of NCPR courses was obtained using a questionnaire at Shizuoka Saiseikai General Hospital, where most NCPR courses were held.

Results: A total of 814 NCPR courses were attended by 12,318 participants throughout Japan. Feedback from 276 participants in 42 NCPR courses held at Shizuoka Saiseikai General Hospital was obtained. Before the course, 59.4% indicated that they had no confidence in performing NCPR. After the course, this percentage dropped to 1.4%. The percentage of participants who indicated that they strongly recommend attending the course was 81.0%. The period allotted for the practical lesson was considered adequate by 78.1%, whereas 20.4% answered that the period was slightly short.

Conclusions: The total number of NCPR courses and participants has increased steadily in Japan. Participants appeared to gain sufficient confidence in performing NCPR after attending the NCPR course. The NCPR course period, especially the portion allotted for the practical lesson, might be short. In this regard, enhancement of the practical lesson would be beneficial.

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DOES INTERNATIONAL COLLABORATION IMPROVE NEONATAL SURVIVAL?

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Aim: Neonatal care was not well established or resourced in Romania in 1999. Through Medical Support in Romania (MSR), close links have been forged between clinicians from UK and Romania with frequent visits, sharing of guidelines and training on the use of CPAP (continuous positive airway pressure). Our aim was to see, if this collaboration