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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.

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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

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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### 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