CREATINAEMIA IN ELBW NEONATES: JAFFE COLORIMETRY VERSUS ENZYMATIC ANALYSIS

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Introduction: Serum creatinine (Scr) reflects glomerular filtration rate to a certain extent in neonates, but also depends on the technique used to quantify Scr [Jaffe colorimetry or enzymatic quantification]. We compared postnatal trends in two consecutive cohorts of ELBW (i.e. < 1000 g) neonates before and following the switch in methodology used (Jaffe to enzymatic)

Methods: Postnatal Scr (day 1,2,3,4,5,6,7,14,21,28) in a cohort of already reported 151 ELBW cases (Jaffe) [1] was compared to 116 more recently admitted ELBW cases (enzymatic). Data on gestational age (GA), weight and growth restriction (SGA) were also collected. Mann-Whitney U test was used to assess and quantify differences.

Results: Median GA (26 vs 27 weeks), weight (810 vs 825 g) and SGA (29 vs 33%) were similar. Median postnatal Jaffe Scr (0.75,1,1.09,1.08,0.98,0.93,0.87,0.77,0.68,0.61 mg/dl) were significantly higher compared to enzymatic (0.575,0.85,0.91,0.87,0.81,0.79,0.73,0.55,0.44,0.41 mg/dl)(all at least $p < 0.001$). The absolute difference in within-day median values was between 0.14 and 0.24 mg/dl.

Conclusions: The difference between Jaffe and enzymatic assessment of Scr has been confirmed and quantified in ELBW neonates in neonatal life. However, simple conversion from Scr Jaffe to Scr enzymatic based on one single claimed absolute difference as suggested for Scr in adults seems to be inadequate in ELBW neonates.

[1] George I, et al. Renal Impairment in ELBW Infants Can Be Defined on Day 3. *Pediatric Nephrology* 2010; 25(9):1973 (abstract 892)