infants are managed on single medication for an average duration of 8 months.

Hypoxic-Ischemic Encephalopathy Biomarkers

Objective To investigate the association between novel urinary biomarkers and outcome in a group of term infants with NE compared to controls.

Methods Levels of urinary biomarkers [Albumin, B2M, Cystatin-C, EGF, NGAL, Osteopontin, Uromodulin] were serially measured over day 1–11 in a group of term newborns with NE and controls. These values were compared to grade of encephalopathy defined by Sarnat score.

Results Ten control and 82 cases had urine samples collected (Grade 0 NE = 7, Grade 1 NE = 22, Grade II NE = 42, Grade III NE = 11). Thirty-nine infants underwent TH, 4 infants died. Control infants had significantly lower B2M on day 1, NGAL on day 1–2 and significantly higher urinary EGF on day 2–3 and Uromodulin on day 3, compared with cases (p-values).

Conclusion Infants with NE have elevated urinary biomarkers compared to controls. Abnormal grade of encephalopathy is best predicted by day 2 urinary Cystatin-C and day 3 NGAL. Urinary biomarkers may have a role in long term outcome prediction following NE.

Urinary Biomarkers May Help Predict Outcome in Neonatal Encephalopathy

Background Following a perinatal hypoxic-ischaemic insult, term infants are at risk of multi-organ injury including AKI. Infants with NE experience up-regulation of urinary cytokines which may reflect severity of brain injury.

Objective To prospectively validate a new structured multi-item RS for HIE.

Methods A standardised structured ordinal RS for HIE with 7 clinical items (alertness, spontaneous motor activity, motor response elicited by stimuli, posture, myotic reflexes, breathing and clinical seizures) and two aEEG items (background and electric seizures), scored by an asymmetric scale (0–8, with higher scores indicating more severe dysfunction) was designed.

The RS was scored in 75 term infants; 47 infants with HIE and in 28 control healthy infants by two blinded examiners within the first 8 h of life. Stages of HIE were established on the basis of our previous qualitative scheme.

Results There were no differences between both cohorts regarding gestational age, weight, and age at evaluation. The Intraclass Correlation Coefficient of the RS was 0.969 in the group of HIE group and 0.930 in the control group. The Internal consistency (Cronbach’s alpha) was 0.897.

The ROC curves depicted that RS distinguished between HIE and control subjects (cut-off 3.5; AUC 0.89) and more importantly between the different stages of HIE: mild compared to moderate HIE (cut-off 7; AUC 0.981) and moderate compared to severe HIE (cut-off 30; AUC 0.920).

Conclusions Our RS for HIE appears to be valid, reliable and sensitive to reflect the severity of HIE.