Summary and conclusion

Severe birth asphyxia with development of hypoxic ishemic brain damage in newborn is one of the most common causes of neurological disability in children. Perinatal asphyxia occur in both preterm and fullterm infants. Asphyxia is strictly defined as the combination of hypoxia, ischemia, acidosis and impaired organ function. Target organs of perinatal asphyxia include the brain, kidney, heart, lung, bowel and bone marrow. Hypoxic ishemic encephalopathy (HIE) is the effect of perinatal asphyxia on the brain.

There are no reliable methods for identifying infants at risk for this disorder (Asphyxia) and the present techniques for assessing its severity are unsatisfactory.

The purpose of this study was to describe prospectively the value of the urinary uric acid to creatinine (Ua/Cr) ratio in showing increased uric acid excretion in early spot urine samples for the identification of perinatal asphyxia and to assess the relationship between the urinary Ua/Cr ratio and the severity of hypoxic – is chaemic encephalopathy.

Twenty-five full term infants with perinatal asphyxia were compared with fifteen healthy controls. The urinary uric acid / creatinine ratio was higher in the asphyxiated group when compared with controls (1.72 ± 0.46 vs 1.07 ± 0.18 respectively, $p<0.001$). furthermore, there was a correlation between the uric acid creatinine ratio and the severity of hypoxic – ischaemic encephalopathy.

Conclusion

The urinary uric acid / creatinine ratio (in the first voided samples) increased in clinically diagnosed term infant with perinatal asphyxia and it correlated with the severity of

encephalopathy. The test is simple, inexpensive and had a high validity parameters of specificity 100%, sensitivity 92%, positive predictive value of 100% and negative predictive value of 88.2 %.

The ratio could be used as an ***early*** diagnostic marker in diagnosis of perinatal asphyxia and could be used also as a prognostic parameter for neurodevelopmental outcome.

Recommendation

The use of urinary uric acid/ creatinine ratio in early diagnosis of asphyxia. In underdeveloped areas, they can do this simple and inexpensive technique and those with high ratio can be transferred to highly qualified centers.