EFFECT OF NUTRITIONAL STATUS AND GESTATIONAL ACTIGRAPHY IS NOT A RELIABLE METHOD FOR SLEEP DETERMINATION OF RENAL HYPOXIC INJURY IN LBW INFANTS WTH IVH USING NEW BIOMARKERS - KIDNEY INJURY MOLECULE 1 (KIM-1) AND URINARY NEUTROPIL GELATINASE-ASSOCIATED LIPOCALIN (uNGAL)

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Background The brain tissue is very sensitive to hypoxia-ischemia and all the changes occurring within it are well studied and easily diagnosed through laboratory and instrumental methods of examination. In contrast, there are few studies examining the influence of hypoxia-ischemia on kidneys in LBW newborns.

Aim To determine the degree of hypoxic-ischaemic renal injury in LBW infants with various grades of IVH using new biomarkers of renal injury such as KIM-1 and uNGAL.

Methods We studied 68/94 LBW infants (GA 28–36 weeks) with IVH (IVH grades I-II (N = 43) and III-IV (N = 25)) and conducted neurosonography and Doppler ultrasound tests of renal arteries. Urine samples were collected on days 1–3 and 7–10 after birth to determine KIM-1 and uNGAL levels.

Results The comparison of the IVH groups I-II and III-IV (Table 1) and the control group (N = 26) shows that the levels of biomarkers KIM-1 and uNGAL significantly increased in grades III-IV IVH infants (p < 0.05).

Conclusion This study finds that severity of renal damage depends on the grade of IVH and shows that KIM-1 and uNGAL are the most sensitive and early markers of hypoxic damage of tubular parts of a kidney.