

HYDROGEN SULFIDE AS INDICATOR OF DIABETIC NEPHROPATHY IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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Introduction: Diabetic nephropathy (DN) is the main reason of end stage renal disease (ESRD) in the whole world. Data of different investigations suggest that oxidative stress plays role in pathogenesis of type 2 diabetes (T2D) and its complications. Hydrogen sulfide (H₂S) is the third member of family of gasotransmitters (the first two are nitric oxide (NO) and carbon monoxide (CO)). They take part in such processes as oxidative stress, inflammation and hypoxia. In some studies is shown that indication of H₂S donors improves kidney recovery after ischemic injury. That's why we try to check if lack of H₂S can lead to DN.

Material & Methods: The investigation included 60

patients with T2D (30 men and 30 women) who undergo treatment in Lviv Emergency Hospital. Mean age of all patients was 57.0±9.8 years. Except standard physical and laboratory examination, additional sample of blood for H₂S was taken and 24 hours of urine sample for microalbuminuria (MAU) was collected. Control group consists of 15 absolute healthy subjects. The diagnosis of T2D and DN was made due to IDF criteria (2015). All patients were divided in two groups: patients without DN and with DN.

Results: H₂S level in control group (54.25±1.5 µmol) was significantly lower than in patients with T2D (64.2±8.2 µmol; p<0,001). But H₂S level in the first group (69.2 ± 6.4 µmol) was higher than in the second group (62.9±8.2 mol; p<0,05). We also revealed moderate negative correlation between MAU and H₂S (r=-0.47957).

Conclusions: Decrease of H₂S can lead to MAU and development of DN.