The Peerian Journal
Open Access | Peer Reviewed
Volume 23, October, 2023.
ISSN (E): 2788-0303
Website: www.peerianjournal.com
Email: editor@peerianjournal.com

Nephropathy in Diabetic Patients and Anemia Their Relationship

Alijonov D.A. student
6 Course of the Faculty of General Medicine
Bektasheva G.M. student
5 Course of the Faculty of General Medicine
Kholmatova G.A. PhD
Head of the Department of Endocrinology and Hospital Therapy
Andijan State Medical Institute
Andijan Uzbekistan

Resume. Diabetes mellitus (DM) is the most common endocrine disease, which in the last decade has been called a worldwide non-communicable epidemic: by 2025, it is expected that the number of patients with DM will exceed 300 million people. This means that late complications arising from metabolic disorders caused by hyperglycemia will also grow. It is well known that the duration and quality of life of patients with diabetes are determined by the development and progression of complications of diabetes.

Key words: diabetes mellitus, microangiopathy, endocrine disease, macrovascular complications, anemia, proteinuria, microalbuminuria, normoalburia.

Relevance. The development of anemia causes not only a decrease in tolerance to physical and mental stress, working capacity and quality of life of the patient, but also is one of the leading mechanisms for the progression of kidney damage and an important risk factor for the development of macrovascular complications of diabetes mellitus (DM) [6-7]. In this regard, the diagnosis and treatment of anemia are becoming one of the topical issues of managing patients with DN, including at an early stage of kidney damage.

The purpose of the study. The purpose of this study was to study the prevalence, clinical and pathophysiological features of anemia in patients with diabetic nephropathy.

Materials and methods of research. In our study, out of 40 patients with DM 1 and DM 2 without DN, anemia was detected in 20%. Among patients with DM 1 and DM 2, there was no difference in the frequency of detection of anemia - 23.3% and 18.3%, respectively. The prevalence of anemia among women was significantly higher than in men (23.0% and 15.6%, respectively ($x2=4.1$; $p<0.05$)), which is 2-3 times higher than the general population values, where its frequency is 10.3% in women and 4.3% in men.

The results of the study. According to our data, anemia was diagnosed more often with DN than in the absence of kidney damage (34.3% and 20.0%, respectively ($x2=2b,4$; $p<0.001$)). In the

The Peerian Journal
Open Access | Peer Reviewed
Volume 23, October, 2023.
ISSN (E): 2788-0303
Website: www.peerianjournal.com
Email: editor@peerianjournal.com

presence of kidney damage, the similarity in the prevalence of anemia among patients with DM 1 and DM 2 disappeared - in patients with DM 1, anemia was detected more often, in almost half of patients, than in DM 2 (44.7% and 27.3%, respectively (x2=16.4; p<0.001)), which is similar to the data of other authors. The high incidence of anemia in DM 1 can be explained by a more severe course of the disease, the early development of renal tubulointerstition and the rapid progression of nephropathy due to a violation of the adaptive mechanisms in the glomeruli in the early stages of DN. However, in patients with DN, there was no difference in the frequency of detection of anemia between the sexes, both with DM 1 and DM 2.

The presence of an association between the development of anemia and the degree of lesion of the glomerular apparatus of the kidneys in DM 1 and DM 2 confirms an increase in its frequency and aggravation of its severity in patients with proteinuria (PU) compared with patients with microalbuminuria (MAU). According to our data, in the presence of PU, the incidence of anemia increased by 2 times (48.2%, X2=57.2; p<0.001) compared to patients with normoalburia (NAU) (20.0%) and MAU (25.7%). This relationship was maintained in a separate analysis - in the group of patients with DM 1 and DM 2. Consequently, with the formation of persistent PU, anemia is detected in every second patient with the progression of diseases. Thus, according to M.C. Thomas, patients with DM2 with PU and renal insufficiency had a decrease in Hb levels by 1-2 g/dl per year compared with patients with NAU and preserved kidney function, in whom the Hb value was stable during the next 5 years of follow-up. He also showed that with DN, a decrease in the blood Hb value by more than 2 g/ dl per year is observed in 50% of patients with PU and only in 10% of patients with NAU or preserved kidney function

Finally, one of the leading causes of anemia in patients with DN is iron deficiency caused by many external and internal factors and pathological conditions - the cause of 15-36% of cases of anemia in the population is iron deficiency. In a population study of NHANES GGG, it was shown that among patients with decreased renal filtration function from 20-30 ml/min/1.73 m2, 46% of women and 19% of men did not have normal HT values, and 47% of women and 44% of men had low values of iron reserves in the body. The authors suggest that it cannot be considered an established fact that patients with higher GFR levels may have normal values of iron metabolism.

In our study, more than 80% of patients with DN and anemia had an iron metabolism disorder. Thus, in the group of patients with anemia, a decrease in iron reserves in the body was detected in 25.0%, low values of iron bioavailability were detected in 21.9%, their combination was observed in 34.4% of cases and only 18.7% of patients had no laboratory signs of iron metabolism disorders. The whole group of patients revealed a direct relationship of blood Hb level with the level of iron (R=0.46; p<0.001), ferritin (R=0.32; p<0.01), serum transferrin (R=0.27; p<0.05) and its saturation (R=0.32; p<0.01).

Conclusion. Thus, anemia is detected much more often with DN than with other kidney diseases - its frequency is up to 25% with normal GFR and reaches up to 80-100% with a pronounced degree of reduction in the filtration function of the kidneys. At the earliest stage of DN - MAU - anemia occurs in almost every fourth, and with the formation of PU - already in every second patient. Anemia in DN is more severe than in primary nephritis. The main cause of anemia in patients with DN is an early decrease in the production of endogenous EPO with the development

The Peerian Journal
Open Access | Peer Reviewed
Volume 23, October, 2023.
ISSN (E): 2788-0303
Website: www.peerianjournal.com
Email: editor@peerianjournal.com

of its functional deficiency. This fact may serve as a basis for earlier initiation of CSE therapy, after correction of iron deficiency, even with a moderate decrease in kidney function.

References

1. Panzram G. Mortality and survival in type 2 (noninsulin-dependent) diabetes mellitus // Diabetologia 1987. V. 30. No. 3. P. 123-131.
2. Mazowiecki A . R ., Velikov in . By . Diabetes mellitus . M .: Medicine, 1987.284 p .
3. Potemkin V.V. Endocrinology. M :. Medicine , 1986. With .215-311.
4. Schram MT, Kostense PJ, Van Dijk RA et al. Diabetes, pulse pressure and cardiovascular mortality: the Hoorn Study // J. Hypertens . 2002. V. 20.No. 9. P. 1743-1751.
5. Lehmann ED, Hopkins KD, Rawesh A. et al. Relation between number of cardiovascular risk factors / events and noninvasive Doppler ultrasound assessments of aortic compliance // Hypertension. 1998. V. 32. No. 3. P. 565-569.
6. Oliver JJ, Webb DJ Noninvasive assessment of arterial stiffness and risk of atherosclerotic events // Arterioscler . Thromb . Vasc . Biol. 2003. V. 23. No. 4. P. 554-566.
7. Roman MJ, Naqvi TZ, Gardin JM et al. Clinical application of noninvasive
8. vascular ultrasound in cardiovascular risk stratification: a report from the American Society of Echocardiography and the Society of Vascular Medicine and Biology // J. Am. Soc. Echocardiogr . 2006. V. 19. No. 8. P. 943-954.
9. Bella JN, Roman MJ, Pini R. et al. Assessment of arterial compliance by carotid midwall strain- stress relation in normotensive adults // Hypertension. 1999. V. 33. No. 3. P. 787-792