ABSCHNITT VII.
MEDIZINISCHE WISSENSCHAFTEN

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DOI 10.36074/24.01.2020.v1.28

ASSOCIATION OF VITAMIN B_{12} DEFICIENCY AND METFORMIN USE IN PATIENTS WITH TYPE 2 DIABETES

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Actuality. According to the available literature sources, the prevalence of diabetes in Ukraine is increasing every year which is related to the peculiarities of the age structure of the population, urbanization, dietary changes and sedentary lifestyle. More than 90% of the incidence is type 2 diabetes. Metformin is the most common oral antihyperglycemic drug in Ukraine. Among the most significant side effects of long-term metformin administration is the development of B12-deficiency anemia, which can lead to neuropathy, which is sometimes misdiagnosed as diabetic neuropathy and, accordingly, is improperly treated. This leads to the progression of irreversible changes in nerve fibers. At the same time, existing violations could be easily corrected in the early stages. [1]

Aim. To investigate homocysteine and vitamin B12 levels in patients that receive metformin as monotherapy for a long time.

Materials and Methods. A retrospective analysis of case histories of 40 patients with type 2 diabetes aged 45-60 years with a history of diabetes of at least 5 years was carried out. Group 1 included 25 patients who received regular metformin as monotherapy at a dose of 2 g per day for 5 years, group 2 included 15 patients who received drugs from the incretin group during the same period of time.

Results. The analysis showed that the use of metformin in patients with diabetes was associated with decreased serum B12 concentrations compared to the group of type 2 diabetes patients who did not take metformin (lower than 150

pmol / l was observed in patients in group 1 than 2 groups ($p < 0.05$). [2]. The mean serum total homocysteine level was 11.5 micromol L (-1) in metformin-exposed patients and 10.6 micromol L (-1) in nonexposed patients. , the metformin-exposed patients had slightly higher serum total homocysteine levels (difference 0.8 micromol L (-1) ($p < 0.05$)., The results were similar in men and women [3]. Most patients developed polyneuropathy, which was was regarded as diabetic neuropathy, leading to tactical mistakes in treatment, because the administration of antioxidants did not stop the progression of polyneuropathy, since vitamin B12 deficiency persisted. [4]

Conclusions. The B12-deficiency anemia complicates the course of diabetes mellitus 2 because it promotes the progression of peripheral polyneuropathy and asthenia, so patients require additional vitamin B-12 intake 2-3 times a year. Annual screening for anemia with subsequent therapeutic intervention can be suggested. [5]

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