

Comparative analysis of the progression of AD among patients with DM type 2 taking and not taking metformin

Metformin is a popular oral antidiabetic drug, used mainly among patients diagnosed with DM type 2. It is satisfactorily tolerated during pharmacotherapy of obese patients and causes a relatively low number of side effects (e.g. lactic acidosis and decrease of the level of vitamin B12)

In terms of biochemistry, vitamin B12 is a metabolic cofactor, which prevents DNA defects. In neurology, standard level of vitamin B12 provides correct formation of the myelin sheath. B12 deficit is, however, also relevant in inducing cognitive impairments such as progression of dementia.

The aim of this work is to analyze the impact of the decrease of vitamin B12 induced by metformin, on the evolution of cognitive impairments in patients diagnosed with AD. The research project carried out at the Medical University of Warsaw assumes examining groups of patients with AD, DM type 2 using different doses of metformin, to analyze the relation between the results of Mini Mental State Examination, Clock Drawing Test and the level of vitamin B12 in the blood. It is expected that all patients will be examined twice in order to analyze the progression of cognitive impairments during the metformin treatment of DM type 2.

Preliminary results show that the decrease of vitamin B12 in the blood of patients using metformin, without any protective supplementation, has resulted in obtaining results mainly in the lower 20% of the normal range. Cognitive tests taken by AD/DM t.2/ metformin patients show increased deterioration of concentration, praxis and recalling. The differences in the results of MMSE tasks assessing remembering skills demonstrated insignificant changes compared to patients without any diagnosed cognitive impairments.