

The Risk of Cobalamin deficiency symptoms related to long-term metformin use in T2DM patients

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Abstrak

Background. Metformin is the first-line oral antidiabetic agent used in the treatment of diabetes mellitus. One of the adverse reactions of the long term use of metformin is cobalamin malabsorption. Clinical and laboratory findings are important in the diagnosis of cobalamin deficiency.

Objective. This study aimed to evaluate the risk of cobalamin deficiency symptoms related to long-term use of metformin in type 2 diabetes mellitus patients at Pasar Rebo General Hospital in Jakarta.

Setting. This quantitative, observational study with retrospective cohort design was conducted in outpatient department Pasar Rebo General Hospital November 2015 until January 2016.

Methods. 200 subjects were recruited and divided into two groups, patients who had been taking metformin for 1-3 years and patients who had been taking metformin for more than 3 years. Each patient was assessed for the

presence of cobalamin deficiency symptoms. Main outcome measure. Cobalamin deficiency symptoms evaluated were symptoms of neuropathy

(measured by DN4 questionnaire) and hematologic abnormalities associated to cobalamin deficiency, i.e. macrocytic erythrocyte, hypersegmented neutrophils, and giant bands.

Results. There are significant differences in the proportions of neuropathy symptoms (RR 2.36, 95%, $p=0.000$) and hematologic abnormalities (RR 1.5, 95%, $p=0.007$) between the two groups.

Conclusions. Long-term use of metformin (≥ 3 years) may increase the risk of cobalamin deficiency symptoms in type 2 diabetes mellitus patients.