

Assessment of the effects of metformin and glibenclamide on the concentration of selected trace elements in type 2 diabetic patients

Abstract:

Metformin and glibenclamide may have beneficial effects on the levels of trace elements in diabetic patients. The aim of the current study was to assess the effects of metformin and glibenclamide on the concentrations of copper (Cu), zinc (Zn) and magnesium (Mg) in patients with type 2 diabetes mellitus. The metformin-treated patients showed significantly lower serum Cu levels compared with the untreated and glibenclamide groups. In addition, treatment with metformin was associated with a significant increase in serum concentrations of Zn compared to the newly diagnosed patients, whereas it did not show a noticeable alteration in the serum level of Mg. In contrast, the glibenclamide treated group revealed significantly higher Zn and Mg levels compared with the newly diagnosed group, while the serum level of Cu was not significantly modified. In conclusion, treatment with metformin led to a reduction in serum Cu and an increase in serum Zn concentrations, whereas glibenclamide treatment displayed enhancement in serum Zn and Mg levels.