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Reviewer's report

Title: Brain-derived neurotrophic factor plasma levels and premature cognitive impairment/dementia in type 2 diabetes

Date: 15 August 2016.

Reviewer's code: 00506294

COMMENTS TO AUTHORS

The article entitled: "Brain-derived neurotrophic factor plasma levels and premature cognitive impairment/dementia in type 2 diabetes" has as objective to assess the relationship of serum levels of brain-derived neurotrophic factor plasma levels with cognitive impairment in patients with type 2 diabetes mellitus; the authors compare compared concentrations of brain-derived neurotrophic factor in patients with chronic renal disease in hemodialysis and controls without hemodialysis. They included 40 patients with diabetes mellitus, 37 patients with chronic kidney disease in hemodialysis and 40 healthy subjects. All subjects were assessed with the Folstein Mini-Mental State Examination to evaluate cognitive impairment. The patients with diabetes mellitus and the patients in hemodialysis were divided in two groups, with cognitive impairment and without cognitive

impairment. The concentrations of brain-derived neurotrophic factor plasma concentrations showed differences between patients with diabetes mellitus and there were no differences between patients in hemodialysis. On the other hand ferritin concentrations were higher in patients with cognitive impairment. They conclude that low concentrations of brain-derived neurotrophic factor plasma are associated with cognitive impairment in patients with diabetes mellitus. Ferritin concentrations were higher in patients with cognitive impairment. The study is original and evaluate the cognitive impairment in diabetes mellitus in relationship with the brain-derived neurotrophic factor plasma levels and ferritin. The article has interest and likes suitable for the publication in the Journal.

Answer:

The observation of the reviewer is pertinent and comments are Relevant. We appreciate your approval of the manuscript.

Reviewer's code: 00036318

COMMENTS TO AUTHORS

The present paper aims to evaluate the role of Brain-derived neurotrophic factor in the pathogenesis of cognitive decline in patients with type 2 diabetes mellitus. However, the study design is confusing. It is not clear why the authors included patients with end-stage chronic kidney disease. In addition, most of these patients had diabetes, and this causes greater confusion in the analyses. I would recommend to remove the group of patients with end-stage renal disease. In addition, a large part of the discussion focuses on ferritin, which was not included in the aims of the study.

Answer:

We designed this study including patients with end-stage chronic kidney disease because we know that a longer duration of DM type 2 has been associated with a major risk of Chronic Kidney Disease (CDK). Most recent prospective studies associate chronic kidney disease with cognitive impairment, and has been considered a possible new determinant of cognitive decline and dementia in Diabetes mellitus type 2.

The analysis of the relationship between serum ferritin and Mini-Mental scores in HD patients showed a significant difference between serum ferritin levels and the presence of cognitive impairment according to the Folstein test. Therefore, we can say that a higher iron overload corresponds to greater cognitive impairment. The monitoring of serum ferritin can prevent one of the possible causes of cognitive impairment and as we discuss important finding of this study

Reviewer's code: 03563823

COMMENTS TO AUTHORS

Authors should include a bibliographical note in the Introduction when they describe lactic acidosis as a side effects of many oral diabetes drugs; this journal is Also Aimed to authors do not specialists in this field.

Answer:

Some people taking metformin develop a serious condition called lactic acidosis, however the group of patients studied with mellitus type 2 diabetes had no symptoms such as: muscle pain or weakness; numb or cold feeling in your arms and legs; trouble breathing; feeling dizzy, light-headed, tired, or very weak; stomach pain, nausea with vomiting; or slow or uneven heart rate. Metformin common side effects may include: nausea, vomiting, upset stomach; or diarrhea.

We do not considered appropriate to include information about this condition is not reported in the patients we studied.