Reviewer's report

Title: Prevalence and Clinical Impact of Magnesium Disorders in End Stage Renal Disease: A Protocol for a Systematic Review

Version: 1 Date: 24 November 2014

Reviewer: IOANNIS TZANAKIS

Reviewer's report:

General comment

I think that it is an interesting proposed protocol.

Although the role of magnesium may be very important in many aspects of renal disease it is a “forgotten” or “ignored” element so it has not been explored in depth.

However there is currently a renewed interest concerning the role of magnesium, particularly in end stage of renal disease (ESRD), and its possible therapeutic applications. I fully agree with the authors that currently we have not guidelines or recommendations for the management of magnesium disorders in ESRD.

I think that this protocol is suitable for publication in “Systematic Reviews” but after some revisions.

Major Compulsory Revisions

The proposed protocol should be a systematic review only, without extending in a metanalysis: a metanalysis explores the result of an applicated therapy on the patient’s outcome by examining and analyzing the existed clinical studies on this topic.

In the recent years many observational or cohort studies that evaluate the impact of serum magnesium levels on patient’s with ESRD outcome have been published. In most of these studies the low serum magnesium levels have been found to be associated with increased atherosclerosis and cardiovascular and/or all cause mortality. However causation has not been proven due to the lack of important clinical studies. To the best of my knowledge only three small clinical studies that evaluate the effect of magnesium supplementation on hemodialysis patient’s outcome are published [1-3]. Yet, in these studies the patient’s outcome was not survival/mortality but surrogates such as coronary artery calcification [1], carotid intima media thickness [2], and arterial calcifications [3]. Taking all these in account I think that the performance of a metanalysis is not yet possible.


2. Turgut F, Kanbay M, Metin MR, Uz E, Akcay A, Covic A. Magnesium supplementation helps to improve carotid intima media thickness in patients on


Minor Essential Revisions

I think that in general the authors have followed the instructions of the PRISMA 2009 check list. However some revisions have to be done:

1. Extend the search of the published articles by adding the terms carotid intima media thickness, mortality, cardiovascular mortality, all cause mortality, survival, long term survival.

2. Add and analyse the instruction no 15 of the PRISMA 2009 check list “Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies”.

3. Some other minor proposed revisions/corrections have been incorporated into the edited manuscript (attached).

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests