Reviewer's report

Title: Inorganic phosphate and the risk of cancer in the Swedish AMORIS study

Version: 1 Date: 10 February 2013

Reviewer: Martin Almquist

Reviewer's report:

This is a large epidemiological study into serum phosphate as a risk factor for cancer. The study is well performed and clearly written. Overall conclusions are well founded.

A major limitation is the lack of data on levels of other phosphate regulating hormones such as vitamin D, parathyroid hormone and calcium, which the authors also point out, and the lack of information on a large number of general and specific risk factors for cancer, such as smoking, reproductive factors, and so on. This restricts the possibility to draw firm conclusions regarding any causal relationship between phosphate and cancer, ie confounding is a possible explanation for all the observed associations between phosphate and cancer.

Major compulsory revisions

I would like a more detailed description of the large part of the original cohort that was excluded from analysis (almost half). Did this cause any selection bias?

Are levels of phosphate stable over time, i.e. do the values measured several years pre-diagnosis reflect an individual's true phosphate levels?

Minor essential revisions

The diary number for the ethical approval should perhaps be mentioned.

It seems from the paper that the same lab and the same method was used for all phosphate analyses in study cohort. If this truly is so maybe this could be more explicitly stated.

The abbreviation SES needs to be explained.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

No competing interests