Reviewer's report

Title: Relationship between serum uric acid and internal carotid resistive index in hypertensive women: a cross-sectional study

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Reviewer: Tomasz Zapolski

Reviewer's report:

In the article entitled: Relationship between serum uric acid and internal carotid resistive index in hypertensive women: a cross-sectional study the Authors have described correlation between uric acid and internal carotid artery resistive index (ICRI), a hemodynamic measure that reflects local vascular impedance and microangiopathy, in women.

Major Compulsory Revisions

The manuscript is well written. This is an original and interesting paper providing the reader to new issue of pathogenesis of uric acid in arterial stiffness. Nevertheless, to become suitable for publication, the Authors should raise the manuscript profile adding some relevant additional details and comments.

1) Data concerning methodology:

• The Authors should specify precisely in Methods the method of uric acid measurement as this is main marker in presented study.

• The method of BMI calculation should be changed. Particularly calculation of body surface – calculation as S=height²[m²] is too simply and used in normal practice. For such kind of professional research more reliable is for example Mosteller, Gehan and George formula: S= 0,0235 x L 0,42246 x M 0,51456

2). In results:

• It is known that the concentration of uric acid is influenced by renal function. Moreover uric acid is a novel independent predisposing factor for renal dysfunction. Thereby the Authors should include into analysis renal function and analyze the possible correlations between uric acid and creatinine, and GFR. A useful paper summarizing some of these factors is Zapolski et al. Kardiol. Pol. 2011; 69: 319-326.

• In stepwise regression analysis has been shown that ICRI was associated not only with uric acid but also with CRP level. CRP is a biomarker of both atherosclerosis and inflammation. It may also influence on arteries. What about correlation between uric acid and CRP (and/or other markers of inflammation state) – did Authors analyze it. It is very important issue in study concerning arterial impedance which is manifestation of atherosclerosis.

3). In discussion:

• It is well known that some drugs, particularly ARB’s may influence (decrease)
the uric acid serum concentration. The issue of drug treatment in studied patients should be more precisely discussed, not only mentioned as a limitation, otherwise this could be in fact important limitation of this study.

• This study has been shown that uric acid level correlated with carotid artery stiffness. The role of uric acid in pathogenesis of arterial stiffness should be more widely discussed.

Essential Revisions

1). In last, the aim of study should be detailed and presented as a separate part of manuscript (entitled shortly: Aim) just after Introduction.

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.