PS1.279

Review of hyperuricemia as new marker for metabolic syndrome

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Background and Aim: Many studies suggest that hyperuricemia may play a role in the development and pathogenesis of a number of metabolic, hemodynamic, and systemic pathologic diseases. in studies, therapies that lower uric acid (UA) may prevent or improve certain components of the metabolic syndrome. The aim of this work is to review the evidence about the pathophysiology of hyperuricaemia and its possible relationship to cardiovascular disease, metabolic syndrome, morbidity and mortality.
Methods: A search was conducted on MEDLINE, Guidelines Finder, The Cochrane Library, using the MeSH terms "hyperuricemia" and "uric acid". The researches were limited to the articles published in the last 5 years in English, Spanish and Portuguese.
Results: From the research resulted 16 articles. They showed that there is an association between serum urate levels and hypertension, heart failure, the metabolic syndrome, obesity and cardiovascular events. UA is recognized as a marker of oxidative stress and it's production includes enzyme xanthine oxidase which is involved in producing of radical-oxigen species (ROS). ROS have a significant role in the increased vascular oxidative stress and might be involved in atherogenesis. UA may inhibit endothelial function by inhibition of nitric oxide-function under conditions of oxidative stress. Down regulation of nitric oxide and induction of endothelial dysfunction might also be involved in pathogenesis of hypertension. Hyperuricemia represents a surrogate marker for high levels of damaging oxidative stress. The assessment of UA is widely available at low cost, which may be an advantage for widespread determination of this marker.
Conclusions: According to the most recent findings, hyperuricemia can be considered as a component of the metabolic syndrome. It's an independent risk factor for renal and cardiovascular morbidity and mortality rates. However, clinical practice still needs further clinical trials finalized to assess urate-lowering efficacy in the much more global context of disease prevention.