Reviewer's report

Title: Calcium and magnesium in drinking water and diet as cardiovascular risk factors in individuals living in hard and soft water areas with differences in cardiovascular mortality. A cohort study.

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Reviewer: Hugo Kesteloot

Level of interest: A paper of considerable general medical or scientific interest

Advice on publication: Accept after discretionary revisions

The literature is incomplete. No mention is made of the chapter 13 - Blood pressure, calcium and water-hardness by H. Kesteloot in Handbook of Hypertension, vol. 6. C.J. Bulpitt Ed. Elsevier Publishers 1985, p216-229. Chapter 20 -id 2000, p337-354 (100 references). In these chapters Mg was considered as the major 'hardwater factor'.
The number of participants is very small (N=207)
The completeness of the 24h urine collection is dubious. The 24h urinary creatinine (about 12 mmol) is the value habitually found in women. In men it is about 50% higher.
Serum HDL-cholesterol values are not given in table 7.
The urinary Ca/Mg ratio has been found to correlate positively with BP. This points to antagonistic effects between Ca and Mg. What is the effect in this study?
No multiple regression analysis including BMI, age and sex as independent variables, has been performed.
It would be preferable to express all cation values in mmol.
A total of 192 correlation coefficients are published out of observations made in 207 subjects (about 100 of each sex). No sex adjustment is made. No correction for multiple testing has been performed.

Competing interests:
None declared.