Reviewer's report

Title: Progression of Coronary Calcification in Healthy Postmenopausal Women

Version: Date: 30 August 2004

Reviewer: Axel Schmermund

Reviewer's report:

General

A subgroup of participants of the Women's Health Initiative Observational Study was examined. Of 305 women who had detectable coronary calcium (Agatston score >= 10), 94 responded to the invitation to undergo a follow-up scan. The women received one written invitation. African-American women received two invitations, because an effort was made to increase their proportion in the study sample. No further efforts were made to increase the response rate (repeated invitations, telephone calls...). Compared with previous studies, progression of coronary calcium was investigated in a relatively large group of women (n = 94) despite the low response rate. Another strength of the study is the comparably long time interval between the scans (3.3 years).

A number of possible factors with influence on the progression of coronary calcium were analyzed. A limitation in this respect was that lipid values were not measured but only assessed by questionnaire. Consistent with previous studies, baseline Agatston score values were predictive of the rate of progression whereas among the other potential factors, only statin use appeared to show some attenuating influence on progression.

As already stated, strengths of the study include the sizeable sample size (women) in comparison with other studies and the relatively long time interval. An important limitation lies in the fact that no laboratory measures were available and no information on changes in risk factors over time. The limitation of using the Agatston scoring method is discussed below.

All in all, the study is well-written and presents important data. There are some limitations which the authors should discuss more specifically.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

My principal concern relates to the use of the Agatston score as the only measure of coronary calcium. The authors should correct this (they might be able to reconstruct calcium area) or, if they are unable or unwilling to provide an alternate measure, discuss the shortcomings of the Agatston score.

It is possible that opposite changes in calcium area and density were not detected with this measure. Or even that in patients whose calcification “consolidated”, i.e., stabilized by retracting and becoming more dense, progression was measured erroneously. It would have been better to use the volume score, calcium area, or even calcium mass.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
Discretionary Revisions (which the author can choose to ignore)

Methods: Please explain in this section why African-American women received two mailings.

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

**Quality of written English:** Acceptable

**Statistical review:** No

**Declaration of competing interests:**

None