

# A potential role of psoriasis in cardiovascular disease

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**TITLE** Psoriasis: a possible risk factor for development of coronary artery calcification

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**LIST OF ABBREVIATIONS** Body mass index (BMI), computed tomography (CT)

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## SUMMARY

It has been demonstrated that raised inflammatory markers in conditions such as rheumatoid arthritis are associated with an increased risk of cardiovascular disease.<sup>1</sup> This study investigated whether chronic psoriasis patients may also be at increased risk of cardiovascular disease. Coronary artery calcification was specifically used as an indicator of cardiovascular disease, as described elsewhere in the literature.

Thirty-two consecutive patients who had had severe psoriasis for more than ten years, but who had no history of cardiovascular disease, were recruited. They were matched for age and sex with 32 controls from a database of patients who had had computed tomography scans and who had no history of cardiovascular or chronic inflammatory disorders. For both groups, information was obtained regarding age, sex, BMI and blood lipid levels. Non contrast-enhanced spiral CT scans were performed for the psoriasis group of patients, and were evaluated for coronary artery calcification by blinded radiologists. The study had an 85% power to detect a 30% difference in coronary artery calcification between the patients and controls.

There was a statistically significant difference in coronary artery calcification between the psoriasis group (59.4%) and control group (28.1%), according to Fisher's test ( $P=0.015$ , unadjusted odds ratio 2.11). Linear regression analysis showed that only age and psoriasis were independent risk factors for coronary artery calcification.

## OPINION

The possible effects of chronic inflammatory diseases on cardiovascular disease are of great importance to all physicians. An increased prevalence of cardiovascular disease has already been shown in other diseases, such as rheumatoid arthritis, where there is systemic inflammation.<sup>1</sup> Some studies have also shown increased risk for cardiovascular mortality among patients requiring inpatient treatment for psoriasis.<sup>2</sup>

A separate prospective study demonstrated an increased relative risk for myocardial infarction compared to healthy controls; this increased risk was greater in younger patients with mild or severe psoriasis, compared to older patients with similar severity of disease.<sup>3</sup> The increased risk may be explained by the role of inflammatory processes in the development of atherosclerosis.

Psoriasis patients have already been shown to have higher rates of smoking, obesity and diabetes compared to control patients.<sup>4</sup> Patients treated with acitretin are also more likely to have raised LDL:HDL cholesterol ratios.<sup>5</sup> The possible presence of these cardiovascular risk factors in psoriasis patients, should be a significant consideration for all general physicians.

We are only beginning to understand the complex interactions between cytokines in the development of cardiovascular disease. Initial research about the effects of biological therapies against TNF-alpha in psoriatic

arthritis has produced mixed results.<sup>6</sup> Some biochemical markers of cardiovascular risk such as lipoprotein A and homocysteine were reduced, while other markers such as triglyceride levels were raised.

Until further research expands our understanding of cardiovascular risk in psoriasis, all physicians who see severe psoriasis patients should be alert to the possibility of an increased risk of cardiovascular disease.

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