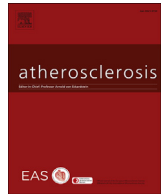




Contents lists available at ScienceDirect

Atherosclerosis

journal homepage: www.elsevier.com/locate/atherosclerosis

Editorial

Xanthomas and atheromas

Keywords:

Xanthoma
Atheroma
CT angiography
Familial hypercholesterolemia
Statin

At the recent Scientific Sessions of the National Lipid Association in Philadelphia, a lot of attention has been paid to the variation in presentation of patients with familial hypercholesterolemia. The phenotypic variation from the disorder is larger among carriers of the same mutation than between those of different mutations. In addition to the type of mutation, clearly other genes and environmental factors influence the expression to a large extent [1]. Early statin treatment has high efficacy in familial hypercholesterolemia [2]. Nonetheless, a residual cardiovascular disease risk persists. One of the greatest present-day challenges is to recognize the statin-treated patients, who still will suffer from cardiovascular disease.

In the paper published in this issue of *Atherosclerosis*, Mangili et al. meticulously phenotyped their patients by examining the Achilles tendons, searching for xanthomas, and performing CT coronary angiography [3]. Twenty-one patients out of 102 asymptomatic patients with treated familial hypercholesterolemia presented with xanthomas and these patients clearly had more extensive coronary artery disease.

A strong association between xanthomas and cardiovascular events had been reported in a meta-analysis [4]. In an underpowered analysis of asymptomatic, statin-treated patients with familial hypercholesterolemia, xanthomas tended to be associated with the extent of coronary artery disease [5]. The article by Mangili et al. confirms this relationship. The findings about the intermediate atherosclerotic trait are important for future research on the prediction of cardiovascular disease. These findings emphasize the need for follow-up and merging of data for meta-analyses to estimate the predictive value of the presence of xanthomas for coronary artery disease. Although statins reduce the size of xanthomas [6], the studies using CT angiography suggest that the xanthomas may still be a valid marker of increased cardiovascular disease risk. It is reassuring that a good physical examination will

probably give you clues about the cardiovascular risk of your statin-treated patients with familial hypercholesterolemia. Notably, Mangili et al. found that the association between xanthomas and coronary artery disease was independent of other known risk factors. If this finding survives future replication efforts, it has provided the first proof that studying xanthomas can be a worthwhile effort to identify new mechanisms of developing atheromas.

Conflict of interest

The author declared he does not have anything to disclose regarding conflict of interest with respect to this manuscript.

References

- [1] A.V. Khera, C.A. Emdin, I. Drake, P. Natarajan, A.G. Bick, N.R. Cook, D.I. Chasman, U. Baber, R. Mehran, D.J. Rader, V. Fuster, E. Boerwinkle, O. Melander, M. Orholm, P.M. Ridker, S. Kathiresan, Genetic risk, adherence to a healthy lifestyle, and coronary disease, *N. Engl. J. Med.* 375 (2016) 2349–2358.
- [2] J. Versmissen, D.M. Oosterveer, M. Yazdanpanah, J.C. Defesche, D.C. Basart, A.H. Liem, J. Heeringa, J.C. Witteman, P.J. Lansberg, J.J. Kastelein, E.J. Sijbrands, Efficacy of statins in familial hypercholesterolaemia: a long term cohort study, *BMJ* 337 (2008) a2423.
- [3] L.C. Mangili, M.H. Miname, P.R.S. Silva, M.S. Bittencourt, V.Z. Rocha, O.C. Mangili, W.S. Filho, A.P. Chacra, C.E. Jannes, A.C. Pereira, R.D. Santos, Achilles tendon xanthomas are associated with the presence and burden of subclinical coronary atherosclerosis in heterozygous familial hypercholesterolemia: a pilot study, *Atherosclerosis* (2017) in press.
- [4] D.M. Oosterveer, J. Versmissen, M. Yazdanpanah, T.H. Hamza, E.J. Sijbrands, Differences in characteristics and risk of cardiovascular disease in familial hypercholesterolemia patients with and without tendon xanthomas: a systematic review and meta-analysis, *Atherosclerosis* 207 (2009) 311–317.
- [5] L.A. Neeffjes, G.J. Ten Kate, R. Alexia, K. Nieman, A.J. Galema-Boers, J.G. Langendonk, A.C. Weustink, N.R. Mollet, E.J. Sijbrands, G.P. Krestin, P.J. de Feyter, Accelerated subclinical coronary atherosclerosis in patients with familial hypercholesterolemia, *Atherosclerosis* 219 (2011) 721–727.
- [6] S.G. Tsouli, V. Xydis, M.I. Argyropoulou, A.D. Tselepis, M. Elisaf, D.N. Kiortsis, Regression of Achilles tendon thickness after statin treatment in patients with familial hypercholesterolemia: an ultrasonographic study, *Atherosclerosis* 205 (2009) 151–155.

Eric J. Sijbrands

Department of Internal Medicine, Erasmus Medical Center, Rotterdam,
The Netherlands

E-mail address: e.sijbrands@erasmusmc.nl.

24 May 2017

Available online xxx

DOI of original article: <http://dx.doi.org/10.1016/j.atherosclerosis.2017.04.025>.<http://dx.doi.org/10.1016/j.atherosclerosis.2017.06.003>

0021-9150/© 2017 Elsevier B.V. All rights reserved.

Please cite this article in press as: E.J. Sijbrands Xanthomas and atheromas, *Atherosclerosis* (2017), <http://dx.doi.org/10.1016/j.atherosclerosis.2017.06.003>