Geographic Atrophy and Cardiovascular Disease

We read with great interest the article by Fleckenstein et al. on the association of the diffuse-trickling (DT) phenotype of geographic atrophy (GA) with cardiovascular disease (CVD), with possible significance for choroidal vascular compromise. We wish to make the readership of IOVS aware that our group has published several relevant observations about the relation among reticular macular disease (RMD), also known as reticular pseudodrusen, of which the DT phenotype appears to be a severe manifestation, GA, CVD, and choroidal compromise.

We first suggested in 2009, based on indocyanine green angiography, that RMD could be due to choroidal insufficiency. In 2011, we presented associations of RMD to hypertension and angina in men. The evidence for choroidal insufficiency as a factor in RMD was summarized in a 2012 review. In a 2013 paper specifically dealing with the relation of RMD to GA, we showed that (1) almost all GA in AMD is multilobular, resembling the DT phenotype; (2) almost all multilobular GA in AMD is associated with RMD; and (3) RMD lesions in multilobular GA are spatially predictive of subsequent GA formation. We further hypothesized that the lesions of RMD and lobules of GA form a multiscale, multistage disease continuum based on choroidal insufficiency. Later in 2013, we showed that geographic atrophy progression was more frequent in fields with RMD than in those without RMD (74.2% vs. 41.7%, P < 0.001), and once again suggested that RMD lesions are signs of a single underlying disease process leading to GA. Finally, in 2014, we reported a greater incidence of hypertension in subjects with RMD than those with soft drusen. We postulated that the marked imbalance toward females in older age groups with RMD reflected an association of RMD with CVD, and the tendency of men to die earlier than women from CVD due to the lack of the cardio-protective effect of estrogen.

These important relationships, which have both ocular and systemic ramifications, are under further active, prospective study at our institution.

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References

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