Vascular outcomes in type 2 diabetes: Relationship with ethnicity

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There are considerable published data examining the relationship between ethnicity and the development of chronic long-term vascular complications in type 2 diabetes. This association has been examined in studies that have been heterogeneous for the definition of outcomes, participant description, particularly geographical location, and also duration of follow-up (they also tend to have investigated a small sample size). In relation to the United Kingdom, previous studies have suggested that Afro-Caribbeans with type 2 diabetes have a reduced rate of coronary heart disease compared to Caucasians (Adler et al, 1998). For people of South Asian origin with type 2 diabetes, previous studies have reported inconsistently for the association between coronary heart disease and mortality; it has been reported either as the same as those in Caucasian people with diabetes (Samanta et al, 1991; Game and Jones, 2000) or increased (Chaturvedi and Fuller, 1996; Forouhi et al, 2006).

Studies investigating the association between type 2 diabetes and cerebrovascular disease suggest an increased occurrence in South Asian and Afro-Caribbean people compared to white Caucasian people (Chaturvedi and Fuller, 1996). Peripheral vascular disease, however, is more frequent amongst white Caucasian people with type 2 diabetes compared with Afro-Caribbean and South Asian people.

In an evaluation of the relationship between vascular disease in type 2 diabetes and ethnicity (summarised on page 102), Davis et al (2014) present a prospective observational analysis of data from the UKPDS (United Kingdom Prospective Diabetes Study) and the long-term follow-up period. They demonstrated that South Asian ethnicity was associated with the greatest overall risk for any diabetes-related end-point after adjustment for ethnic differences, major cardiovascular risk factors and other associated variables. By contrast, the South Asian participants with type 2 diabetes had reduced rates of all-cause death, and especially peripheral vascular disease compared to Caucasian people. No difference was found between the two ethnic groups in fatal and non-fatal myocardial infarction. Another interesting finding in the study was that Afro-Caribbean ethnicity was linked to a substantially reduced risk of diabetes-related death, all-cause mortality, fatal or non-fatal myocardial infarction and peripheral vascular disease compared to white Caucasian people with type 2 diabetes. No significant difference in the rates of stroke or microvascular disease between the three ethnic groups were observed.

The overall conclusion from the study was that South Asian participants with type 2 diabetes carry the greatest disease burden, but white Caucasian participants have the worst prognosis. Furthermore, Afro-Caribbean participants appeared to have relative protection from macrovascular disease.

These differences in outcomes may be related to between-group variations in central adiposity (and consequently its insensitivity), or the disproportionate effect of novel risk factors such as highly sensitive C-reactive protein, fibrinogen, lipo-protein (A) and homocysteine in the different ethnicities of the participants.

Thus, whilst Afro-Caribbean people in the UK have a substantially lower risk of coronary heart disease and death, the risks for coronary heart disease, stroke and microvascular complication in this study after adjusting for known risk factors appear to be similar for white Caucasians and South Asian people. However, South Asians are at increased risk of diabetes-related complications in terms of prognosis. Consequently, the suggestion that intensive multifaceted management is be important for this group is further corroborated. ■

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