Study reveals extent of type 2 diabetes problem in black and minority ethnic populations

September 10 2012

Half of all people of South Asian, African and African Caribbean descent will develop diabetes by age 80 according to a new study published today. The study is the first to reveal the full extent of ethnic differences in the risk of developing type 2 diabetes and also provides some answers as to the causes of the increased risk.

The findings come from the Southall and Brent REvisited (SABRE) study, a large-scale population based study funded by the Wellcome Trust and British Heart Foundation which has followed nearly 5000 middle-aged Londoners of European, South Asian, African and African Caribbean descent for over 20 years.

Type 2 diabetes is a long term condition that affects approximately 2.9 million people in the UK. In total, an estimated £11.9billion is spent each year on treating type 2 diabetes and its complications. Early diagnosis and careful management are vital in order to prevent complications such as heart attack, stroke and kidney disease.

It has been known for some time that people of South Asian, African and African Caribbean descent are at increased risk of developing diabetes in mid-life, but it is not known why this is or whether this extra risk continues as people get older. By tracking the development of diabetes in the SABRE cohort, researchers led by Nish Chaturvedi at Imperial College London have revealed the extent of the problem in the

UK and offer some explanations as to why these differences arise.

The study reveals that by age 80, twice as many British South Asian, African and African Caribbean men and women had developed diabetes compared with Europeans of the same age. Approximately half of all South Asians, Africans and African Caribbeans in the UK will develop the disease by age 80 compared with only one in five of European descent.

The study looked at individuals who did not already have type 2 diabetes at the start of the study, which began following participants aged 40 to 69 from 1988 onwards, and recorded those that developed the disease. The team found that while African, African Caribbeans and Europeans tend to be diagnosed at around the same age, 66-67 years, South Asian men were 5 years younger on average when diabetes was diagnosed, meaning that they are at even greater risk of complications.

In order to understand the causes of this increased diabetes risk, the researchers looked at a number of risk factors across the different ethnic groups.

Family history of diabetes is known to be an important risk factor for all ethnic groups. However, even though over half of South Asian, African and African Caribbean men and one third of women had a family history of diabetes, this did not explain the extra risk over their European counterparts.

It is known that the onset of type 2 diabetes is frequently preceded by an increase in insulin resistance, where the body becomes insensitive to the effects of insulin on glucose metabolism, resulting in high circulating glucose. Weight gain and obesity are known factors that can underlie increases in insulin resistance.

The team found that carrying fat around the trunk or middle of the body in mid-life together with increased resistance to the effects of insulin explained why South Asian, African and African Caribbean women are more at risk of developing diabetes than British European women. However, this explained only part of the increased risk in South Asian, African and African Caribbean men, suggesting that other factors that are as yet unknown may also play a part.

The findings are published today in the journal *Diabetes Care*.

Dr Therese Tillin, from the National Heart and Lung Institute at Imperial College London, said "Not only does this study increase our understanding of the reasons for ethnic differences in risks of diabetes, it highlights the astonishingly high risk of diabetes in middle-aged people in our ethnic minorities and the importance of early diagnosis and careful management. Future analyses will examine methods of predicting which individuals are most risk of diabetes– the good news is that diabetes can be prevented if the warning signs are recognised early enough."

Professor Nish Chaturvedi, also from the National Heart and Lung Institute at Imperial College London, said: "We set up the SABRE study in 1988 and it is one of the largest and longest running tri-ethnic cohorts in the UK. We are enormously grateful to all the participants for their continuing support of the study, which has enabled us to begin to understand why diabetes happens in some people and not in others. We plan to extend our research to examine the roles of genes and the environment at different stages of life in causing diabetes in the three ethnic groups."

Dr Hélène Wilson, Research Advisor at the British Heart Foundation (BHF), said: "This study suggests the higher rate of diabetes – a major risk factor for heart attacks and strokes – in some South Asian and

African Caribbean women is due to increased levels of obesity, particularly the build-up of fat around the waist, and higher resistance to insulin, which helps the body process sugar.

"This is a very encouraging discovery because it underlines the fact that controlling your weight by eating well and getting active can have a significant protective effect on your health. There's a wealth of existing evidence that keeping the weight off by eating a healthy balanced diet and being physically active will reduce your risk of heart disease and type 2 diabetes, whatever your ethnic group."

Professor Danny Altman, Head of Pathogens, Immunology and Population Health at the Wellcome Trust, said: "Chronic diseases such as diabetes are a growing threat to global health as people are not only living longer lives but also begin to develop disease at a younger age. Long-term population studies like the SABRE study are essential for helping us to understand the factors that contribute to disease and to identify the communities that are most at risk."

More information: T.Tillin et al. Insulin resistance and truncal obesity are important determinants of the greater incidence of diabetes in Indian Asians and African Caribbeans compared to Europeans: the Southall And Brent REvisited (SABRE) cohort. *Diabetes Care*, 10 September 2012 [Epub ahead of print].

Provided by Wellcome Trust

Citation: Study reveals extent of type 2 diabetes problem in black and minority ethnic populations (2012, September 10) retrieved 25 April 2024 from https://medicalxpress.com/news/2012-09-reveals-extent-diabetes-problem-black.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.