

Disproportionate impact of early-onset type 2 diabetes on individuals of South Asian and African-Caribbean ethnicity

September 24 2020

A new study presented at this year's annual meeting of the European Association for the Study of Diabetes (EASD) shows the disproportionate impact of early-onset adult type 2 diabetes (T2D) on individuals of South Asian and African-Caribbean ethnicity in the UK.

The research was conducted by Janthula Ranchagoda, Dr. Shivani Misra and colleagues at the Department of Medicine, Imperial College London, and Imperial College Healthcare NHS Trust, London, UK. It analysed prevalence of early-onset adult T2D in diverse ethnic groups, as well as to investigate the link between a person's body mass index (BMI) and their age-at-onset of T2D.

The incidence of T2D in [early adulthood](#) has increased rapidly in the UK, and the individuals affected have a higher and accelerated risk of diabetes-related complications and mortality compared to those who develop the disease later in life. Previous studies into T2D in children have shown that non-white ethnicities are disproportionately affected. In older onset cases, south Asian people are relatively leaner at diagnosis of T2D than white individuals. The team sought to understand the ethnic distribution of cases of early-onset T2D in adults.

The team performed a cross-sectional study of individuals with T2D of white, South Asian (SA), or African-Caribbean (AC) ethnicity from an anonymised population dataset of 1,407,990, which had been compiled

from general practice records in North West London. All cases of T2D were included in the analysis where the individuals last clinical encounter occurred between April 2015 and December 2019.

The researchers defined early-onset T2D if the affected individual was diagnosed between 18-44 years old, irrespective of their current age. Using these data, they calculated the proportion of cases of T2D by age of diagnosis and grouped by decade, as well as the mean BMI for each ethnicity. A further comparison was made between those individuals currently aged 18-44 years to those aged 55-79 years, all of whom had lived with T2D for less than 5 years.

The authors found that across the sample group as a whole, the overall prevalence of T2D across all ages was 6.5%, however there were significant differences in the proportion of each ethnicity living with the disease. T2D was present in 3.4% of white patients, compared to 10.1% and 8.3% of SA and AC individuals, respectively.

The proportion of cases by decade of onset also varied significantly by ethnicity. In white individuals 15.7% of cases were classed as early-onset, and there was a peak of 28.8% of diagnoses taking place within the 55-64 years age group. The proportion of early-onset cases was significantly higher in SA individuals at 30.7%, while their peak decade was among the 45-54 years age group during which 31.2% of diagnoses occurred. Those of AC background also had a higher proportion of early-onset diabetes with 25.8% of cases being found in individuals aged 18-44 years; and the most common age range for onset was also 45-54 years, making up 30.7% of diagnoses.

The researchers discovered that across all ethnicities the mean BMI of patients who had lived with T2D for less than 5 years was significantly higher in those currently aged 18-44 years than in individuals diagnosed aged 55-79 years. BMI for both age groups was highest in white

individuals, significantly lower among AC people, and lowest in the SA group. In white individuals currently aged 18-45 (n=563), BMI was 34.8kg/m² vs 31.8 for 55-79 yrs (n=3921). SA people had significantly lower BMI than white, but similar trends; BMI 30.3 kg/m² (18-45, n=3806) vs 28.6 (55-79, n=8090). In AC individuals, BMI was 33.7 (18-45, n=475) and 31.0 age (55-79, n=1595).

The authors say: "Early adult-onset type 2 diabetes disproportionately affects South Asian and African-Caribbean ethnicities; compared to [white individuals](#) with early-onset T2D, the SA prevalence is double and AC prevalence 60% higher."

"In all ethnic groups, early-onset T2D is associated with significant obesity but the trend observed in previous studies of South Asian individuals developing T2D at a lower BMI than other ethnic groups is maintained for those patients presenting the disease early in adulthood, just as in late adulthood."

The team conclude: "Early-onset T2D in adults disproportionately affects people from minority ethnic groups in the UK and is associated with a higher level of obesity compared to those diagnosed at later age. We now need to investigate and understand why south Asian and African-Caribbean people appear to be at such higher risk of developing T2D at early age in order to address this growing health crisis."

Provided by Diabetologia

Citation: Disproportionate impact of early-onset type 2 diabetes on individuals of South Asian and African-Caribbean ethnicity (2020, September 24) retrieved 23 May 2024 from <https://medicalxpress.com/news/2020-09-disproportionate-impact-early-onset-diabetes-individuals.html>

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