

Cardiovascular journals

Three distinct types of diabetes: Type 2 E (European), type 2 AC (African Caribbean) and type 2 SA (South Asian)?



Vinod Patel, Principal Teaching Fellow, Warwick Medical School, University of Warwick and Honorary Consultant in Diabetes and Endocrinology, George Eliot Hospital NHS Trust, Nuneaton

The Southall and Brent Revisited (SABRE) investigation is the largest tri-ethnic population-based study to be conducted in the UK. A total of 4196 participants (European=2049, South Asian=1517 and African Caribbean=630) were recruited and prospectively followed up for a median of 20.5 years.

(Tillin et al, summarised alongside).

Baseline data confirmed well-known facts in our understanding of cardiovascular disease (CVD) risk factors in different ethnic groups. In comparison to Europeans, South Asians had 3.14 times more diabetes in men and 4.25 times more in women. In African Caribbeans, the ratios were $\times 2.57$ and $\times 5.25$, respectively. South Asians were significantly less physically active with increased insulin resistance, whilst African Caribbeans were more hypertensive.

The age and sex-adjusted rate of coronary heart disease (CHD) was increased by $\times 1.7$ in South Asians and reduced to 0.64 in African Caribbeans. Both South Asians ($\times 1.45$) and African Caribbeans ($\times 1.50$) had an increased risk of stroke.

The risk factor adjustment that best attenuated the excess South Asian risk for CHD was the adverse waist-to-hip ratio. Traditional risk factors from the Framingham and INTERHEART studies did not account for all the South Asian excess CHD risk, nor the protection from CHD in African Caribbeans. Diabetes itself carried a different hazard ratio for CHD in different ethnic groups: South Asians $\times 1.90$, Europeans $\times 1.61$ and African Caribbeans $\times 1.31$. For stroke, however, the increased risks with diabetes were: African Caribbeans $\times 3.0$, South Asians $\times 2.5$ and Europeans $\times 1.3$.

“The risk factor adjustment that best attenuated the excess South Asian risk for coronary heart disease (CHD) was the adverse waist-to-hip ratio. Traditional risk factors from the Framingham and INTERHEART studies did not account for all the South Asian excess CHD risk, nor the protection from CHD in African Caribbeans.”

So what do we conclude? More questions emerge. Is the “diabetes” in each ethnic group different? Certainly, one would rather choose the CHD protective “African Caribbean diabetes” rather than “South Asian diabetes”, but may wish to avoid both due to the increased risk of stroke! To work towards the CHD protective “European diabetes” phenotype, the most obvious risk factors to attenuate are central obesity in South Asians and the excess hypertension in African Caribbeans.

J AM COLL CARDIOL

Ethnic differences in CVD are not linked to metabolic factors

| | |
|---------------------------|-------|
| Readability | ✓✓✓✓ |
| Applicability to practice | ✓✓✓✓✓ |
| WOW! factor | ✓✓✓✓✓ |

1 Previous research suggests that South Asian individuals have an increased risk of coronary heart disease (CHD), although this risk is lower in African Caribbean and European people.

2 The authors investigated if ethnic differences in cardiovascular disease (CVD) could be explained by ethnic differences in diabetes prevalence, ectopic fat deposition and dyslipidemia.

3 A prospective, population-based study was conducted using data from 2049 European, 1517 South Asian, and 630 African Caribbean participants, who were followed up for 20.5 years.

4 At baseline, the prevalence of diabetes was increased in South Asian and African Caribbean participants compared to Europeans. The incidence of stroke was also higher in African Caribbeans than in the other groups, which was more pronounced in people with diabetes (age-adjusted subhazard ratio [SHR] 1.97; 95% CI, 1.16–3.35; $P=0.038$ for interaction).

5 After adjusting for waist-to-hip ratio, the incidence of CHD was greater in South Asians and lower in African Caribbean participants, compared to Europeans (SHR 1.45; 95% CI, 1.28–1.64; $P<0.001$). Despite adjustment for high-density lipoprotein and low-density lipoprotein cholesterol, the SHR for lower CHD in African Caribbean participants remained significant (SHR 0.64; 95% CI, 0.52–0.79; $P<0.001$).

6 The authors concluded that ethnic differences in metabolic parameters are not associated with the varied incidence of CHD between different ethnic groups.

Tillin T, Hughes AD, Mayet J et al (2013) The relationship between metabolic risk factors and incident cardiovascular disease in Europeans, South Asians, and African Caribbeans. *J Am Coll Cardiol* 61: 1777–86

AM J CARDIOL

Unfavourable CV risk profiles in Italian cardiologists

| | |
|---------------------------|------|
| Readability | ✓✓✓✓ |
| Applicability to practice | ✓✓✓ |
| WOW! factor | ✓✓✓ |

1 To date, few studies have examined the cardiovascular (CV) risk profile and lifestyle habits of healthcare professionals such as cardiologists.

2 The authors conducted the Survey on Cardiac Risk Profile and Lifestyle Habits in a Cohort of Italian Cardiologists (SOCRATES) to investigate the personal health habits in this group of healthcare professionals.

3 For a period of 3 months, an electronic survey was made available to three national cardiology societies. The web-based survey collected data on baseline characteristics, medical illness, traditional CV risk factors (hypertension, hypercholesterolemia, smoking, diabetes and past vascular events), lifestyle habits and medication use.

4 In total, 1770 of 5240 (33.7%) cardiologists completed at least one section of the survey. One of five CV risk factors was observed in more than 49% of the cohort, and more than 28% were found to have two of the five risk factors. Just 22.1% reported none of the five CV risk factors.

5 Over 90% of participants self-reported low or intermediate CV risk but CV medication (such as aspirin and statins) use was low amongst the cohort. Stress at home or work, physical inactivity and being overweight were also frequently reported.

6 The authors concluded that CV risk profiles in this cohort of Italian cardiologists may be thought of as unfavourable, considering recent guidelines and advice for CV risk management.

Temporelli PL, Zito G, Faggiano P et al (2013) Cardiovascular risk profile and lifestyle habits in a cohort of Italian cardiologists (from the SOCRATES survey). *Am J Cardiol* 12 Apr [Epub ahead of print]

INT J CARDIOL

Prediabetes is not a risk factor for heart failure

| | |
|---------------------------|-----|
| Readability | ✓✓✓ |
| Applicability to practice | ✓✓✓ |
| WOW! factor | ✓✓✓ |

1 Although it has been established that diabetes can increase the risk of heart failure (HF), it is not known whether the incidence of HF is influenced by prediabetes.

2 The authors aimed to determine if prediabetes is an independent risk factor for HF in a cohort of participants from the Cardiovascular Health Study.

3 Of the 4602 participants who enrolled in the study, 2157 were diagnosed with prediabetes. Participants (mean age=73 years) were matched using 44 baseline characteristics to make 1421 pairs of individuals with and without prediabetes.

4 In the 4602 pre-match participants with and without prediabetes, the unadjusted and multivariable-adjusted hazard ratios [HR] for HF associated with prediabetes were 1.22 (95% CI, 1.07–1.40; $P=0.003$) and 0.98 (95% CI, 0.85–1.14; $P=0.826$).

5 The incidence of HF was similar in matched participants with (18%) and without (20%) prediabetes (HR associated with prediabetes 0.90; 95% CI, 0.76–1.07; $P=0.239$).

6 In matched participants, prediabetes was not associated with angina pectoris (HR 0.93; 95% CI, 0.77–1.12; $P=0.451$), acute myocardial infarction (HR 1.02; 95% CI, 0.81–1.28; $P=0.875$), stroke (HR 0.86; 95% CI, 0.70–1.06; $P=0.151$) or all-cause mortality (HR 0.99; 95% CI, 0.88–1.11; $P=0.840$).

7 The authors concluded that prediabetes was not significantly associated with HF or other cardiovascular events.

Deedwania P, Patel K, Fonarow GC et al (2013) Prediabetes is not an independent risk factor for incident heart failure, other cardiovascular events or mortality in older adults. *Int J Cardiol* 31 May [Epub ahead of print]

HEART

Increased ankle pressures in South Asians with diabetes

| | |
|---------------------------|-----|
| Readability | ✓✓✓ |
| Applicability to practice | ✓✓✓ |
| WOW! factor | ✓✓✓ |

1 Low ankle blood pressure values have been found to correlate with an increased risk of cardiovascular (CV) and all-cause mortality. However, ethnic differences in ankle pressures have not been extensively investigated.

2 The authors conducted a case-control study to explore the possible ethnic differences in ankle pressures between South Asian and European people, both with and without diabetes.

3 Using a Doppler probe, systolic blood pressure was measured in the left (L) and right (R) brachial, posterior tibial (PT) and dorsalis pedis (DP) arteries in a total of 391 South Asian people (with diabetes=154) and 252 European (with diabetes=72) people.

4 Young South Asian participants had lower ankle pressures compared to Europeans (RPT; 146 versus 157 mmHg, LPT; 143 versus 154 mmHg, RDP; 138 versus 150 mmHg and LDP; 137 versus 149 mmHg; $P\leq 0.0001$ for all). Greater odds ratios for CV disease were observed in South Asians with an ankle brachial index of 0.9–1.3 or above.

5 Age was an independent predictor of elevated pedal pressure in South Asian participants and diabetes was associated with increased RPT and LDP pressures.

6 Pedal pressures were increased in RPT, LPT and LDP in European participants, and all ankle pressures were elevated in South Asian participants with diabetes, compared to those without the condition.

7 The authors concluded that South Asian people with diabetes had increased ankle pressures, which were similar to that of European participants with diabetes who were 10 years older.

Kain K, Brockway M, Ishfaq T et al (2013) Ankle pressures in UK South Asians with diabetes mellitus: a case control study. *Heart* 99: 614–9

“The authors concluded that South Asian people with diabetes had increased ankle pressures, which were similar to that of European participants with diabetes who were 10 years older”