

## Diabetes journals

### DIABETOLOGIA

#### South Asian people at increased CV and diabetes risk

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

- The authors describe and compare the prevalence of type 2 diabetes and cardiovascular disease (CVD) in the South Asian and white Caucasian populations in the UK.
- Many papers have reported the increased prevalence of insulin resistance in South Asian people when compared to Caucasians and that this resistance manifests early.
- Insulin resistance is postulated as a central feature of the metabolic syndrome, contributing to type 2 diabetes and CVD. It is therefore essential to consider in South Asians as a high-risk group.
- From the literature review, it was found that the UK South Asian community have a substantially increased risk for type 2 diabetes and ischaemic heart disease, a greater severity of premature and aggressive atherosclerosis, and increased risk profile from conventional CVD risk factors.
- Risk-reduction strategies are not at present targeting South Asian people with sufficient power.
- To meet the health needs of this population, cultural, traditional and religious aspects must be fully understood and considered.
- Measures to control diabetes and CVD in South Asian communities urgently need to be addressed, and to this end this a new community-based management programme for the South Asian population has been put in place.

Barnett AH, Dixon AN, Bellary S et al (2006) Type 2 diabetes and cardiovascular risk in the UK south Asian community. *Diabetologia* **49**: 2234–46

#### Quantifying and addressing the cardiovascular risks of diabetes in South Asian populations



Vinod Patel, Consultant Physician at the George Eliot Hospital, Nuneaton, and Associate Professor at the University of Warwick

No apologies will be forthcoming for choosing a review paper as the subject for my first commentary paper as an editor of the cardiovascular section of *Diabetes Digest*. This is a seminal review of the subject and as such clearly points the way towards more effective

CVD risk assessment and management in this very high-risk population.

The thorough review by Barnett and colleagues in the West Midlands highlights the increased prevalence of mainstream CVD risk factors in the South Asian Community. While this includes the well-known increased prevalence of diabetes, the heterogeneity within the South Asian community is also covered, giving clear implications for UK services that cover high-risk sub-groups such as those from Bangladesh and Pakistan.

Emerging CVD risk factors that are different in South Asians, such as adiponectin (lower), CRP (higher), homocysteine (probably higher) and plasminogen activator inhibitor 1 (higher) are also discussed. Some important genetic polymorphisms in the insulin signalling pathway may predispose South Asians to insulin resistance under certain

environmental conditions.

The urgent messages in this review apply to the population of India where increasing wealth has created the 'Diabetic Middle Class' – many millions now fall into this category. The number of known patients with diabetes in India is thought to be greater than 50 million.

In a few years time, this journal may well report the results of the UKADS (UK Asian Diabetes Study). Early pilot results are presented in this review and clearly show that culturally sensitive diabetes care using Asian Link Workers and other enhancements in care delivers better cholesterol and BP levels but does not influence glycaemic control.

This review makes a passionate plea to all of us involved in diabetes care to address screening for diabetes, lipid management, BP treatment, aspirin and statin use. The argument for adoption of clinical targets stricter than the Quality and Outcomes Framework is developed from epidemiological data showing that CVD risk factors such as LDL cholesterol, BMI, reduced exercise and low HDL cholesterol are all more prevalent in the UK South Asian population than in India itself. This is particularly pertinent as a treatment gap has been identified between South Asians and the UK average with respect to statin prescribing and other cardio-protective treatments.

### DIABETIC MEDICINE

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

#### Diabetes and silent MI are CV risk factors

- The study assessed the long-term prognosis of CV morbidity and mortality of 203 people with diabetes, 6 years after screening for silent myocardial ischaemia (SMI); 171 people screened negative for SMI and 32 people screened positive, of whom

21 also had coronary stenosis.

- After 6 years, 20 people with positive SMI screening and coronary stenosis had a higher risk of non-fatal major cardiac events and a higher mortality rate compared with people with negative screening.
- Major cardiac events were related to baseline age, body mass index and coronary stenosis.
- Participants with diabetes and SMI have a poor prognosis for cardiac events, especially in the presence of coronary stenosis.

Sejil S, Janand-Delenne B, Avierinos JF et al (2006) Six-year follow-up of a cohort of 203 patients with diabetes after screening for silent myocardial ischaemia. *Diabetic Medicine* **23**: 1186–91

**'High adiponectin levels were associated with a lower incidence of type 2 diabetes, and this association appeared stronger in women than in men.'**

**'For all-cause mortality in the first 2 years of follow up, there was a twofold increase in risk of death among those with new-onset diabetes compared with those without diabetes'**

## DIABETES CARE

### No CV mortality increase over time in new-onset diabetes

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

- The hypothesis tested was that the risk of all-cause mortality would be similar among participants aged  $\geq 65$  years with new-onset diabetes ( $n=282$ ) and those without diabetes ( $n=837$ ) in the first 2 years of follow up, and that the mortality risk associated with diabetes would increase gradually over time.
- During a median of 5.9 years of follow up there were a total of 352 deaths, of which 143 (41%) were CV-related. Overall survival was worse among those with new-onset diabetes compared with those without diabetes.
- The risk of all-cause mortality was 50% greater (hazard ratio of 1.9) and the risk of CV-related mortality was twofold greater (hazard ratio of 2.2) in those with new-onset diabetes compared with those without diabetes.
- For all-cause mortality in the first 2 years of follow up, there was a twofold increase in risk of death among those with new-onset diabetes compared with those without diabetes, but this risk did not increase over time; for CV-related mortality there was a multifold increase in risk of death among the new-onset group in the first 2 years, but this also did not increase over time.
- There may be a mortality differential soon after onset of diabetes in older adults, and long-term atherosclerotic damage may not be primarily responsible for increased CV risk.

Smith NL, Barzilay JI, Kronmal R et al (2006) New-onset diabetes and risk of all-cause and cardiovascular mortality: the Cardiovascular Health Study *Diabetes Care* **29**: 2012–17

## DIABETES CARE

### High adiponectin lowers type 2 diabetes risk

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

- The authors investigated the association between adiponectin levels and the 6.4-year incidence of type 2 diabetes and impaired glucose metabolism in a large population aged 50–75 years.
- Along with cholesterol and protein assessments, 1264 people from the Hoorn cohort without type 2 diabetes at baseline were measured for BMI, WHR, fasting glucose, 2-hour postload glucose levels, triglycerides. Participants also completed a

questionnaire relating to their lifestyle.

- High adiponectin levels were associated with a lower incidence of type 2 diabetes, and this association appeared stronger in women than in men.
- The association of a high adiponectin level with a lower risk of impaired glucose metabolism found in women was not observed in men. The authors hypothesised that this could be due to the two different isoforms of adiponectin occurring in different ratios in men and women.
- The finding that a reduction in weight impacted on adiponectin but weight was not affected by adiponectin levels suggests that adiponectin may play an important role in the pathogenesis of abnormal glucose metabolism.
- Further investigation of the underlying mechanisms is needed.

Snijder MB, Heine RJ, Seidell JC et al (2006) Associations of adiponectin levels with incident impaired glucose metabolism and type 2 diabetes in older men and women: the hoorn study. *Diabetes Care* **29**: 2498–2503

## DIABETOLOGIA

### Women aged 35–54 with diabetes at higher risk of stroke

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

- This study sought to obtain reliable risk estimates for stroke across all age groups and to test the effect of sex, body mass index, smoking habits, hypertension, atrial fibrillation and duration of diabetes.
- The study cohort consisted of 41 799 people with type 2 diabetes and 202 733 people without diabetes.
- The absolute rate of stroke was 11.91 per 1000-person years in people with diabetes and 5.55 per

1000-person years in the comparison group.

- While diabetes was linked to risk of stroke, following a stroke 28-day mortality was similar between those with and those without diabetes.
- The age-adjusted hazard ratio for stroke in the cohort with type 2 diabetes compared with those without diabetes was 2.19 overall; 2.08 in men and 2.32 in women.
- Younger women (35–54 years) showed the highest increase in risk of stroke attributable to diabetes. Further analysis showed that this increased risk was not explained by obesity, smoking or comorbidities.
- Duration of diabetes, smoking, obesity, atrial fibrillation and hypertension were all found to be additional stroke risk factors.

Mulnier HE, Seaman HE, Raleigh VS et al (2006) Risk of stroke in people with type 2 diabetes in the UK: a study using the General Practice Research Database. *Diabetologia* **49**: 2859–65

## DIABETOLOGIA

### Asian-Indian people at higher risk of ischaemic heart disease

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

**1** The study aim was to establish whether or not ethnicity modifies the risk of ischaemic heart disease (IHD) associated with diabetes.

**2** The study sample came from the Singapore Cardiovascular Cohort Study which was run between 1984 and 1995. Data for a total of 5707 Chinese, Malay and Asian-Indian people were analysed.

**3** A total of 240 IHD events were reported over a median follow up of 10.2 years.

**4** The overall prevalence of diabetes was 6.0% in Chinese, 9.0% in Malay and 12.8% in Asian-Indian

people.

**5** As well as having the highest prevalence rates of diabetes, the additional risk of IHD, where diabetes is established, is greater in Asian-Indian people than in people from Chinese or Malay origins.

**6** The ethnic differences in IHD rates among those with diabetes result from a difference in the baseline risk of IHD between ethnic groups as well as a difference in the risk of IHD associated with diabetes between ethnic groups.

**7** The authors concluded that ethnicity does modify the risk of IHD associated with diabetes, with Asian-Indian people at highest risk. Programmes to prevent diabetes should therefore target this large, at-risk population.

**8** Future research should focus on discovering, defining and quantifying the pathogenesis of diabetes and the impact ethnic origin has on it.

Yeo KK, Tai BC, Heng D et al (2006) Ethnicity modifies the association between diabetes mellitus and ischaemic heart disease in Chinese, Malays and Asian Indians living in Singapore. *Diabetologia* **49**: 2866–73

## DIABETOLOGIA

### South Asian men at higher coronary heart disease risk

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

**1** The authors prospectively examined whether measured risk factors can explain the higher coronary heart disease (CHD) mortality in 1420 South Asian men compared with in 1787 European men.

**2** The median follow up was 16.2 years. There were 536 deaths, of which 202 were CHD-related deaths; of whom 94 were European and 108

South Asian.

**3** The crude CHD mortality incidence rate per 1000-person years was 3.5 in the European group and 4.9 in the South Asian group.

**4** Nearly half of all South Asian CHD deaths vs only 13% of deaths among Europeans were in people with diabetes; the ethnic difference in CHD mortality persisted in people with diabetes, with a doubling of CHD mortality in the South Asian cohort.

**5** Results confirm that South Asian men have significantly higher CHD mortality than European men, and that neither conventional risk factors nor impaired glucose metabolism can account for this excess risk.

Forouhi NG, Sattar N, Tillin T et al (2006) Do known risk factors explain the higher coronary heart disease mortality in South Asian compared with European men? Prospective follow-up of the Southall and Brent studies, UK. *Diabetologia* **49**: 2580–8

## JOURNAL OF DIABETES AND ITS COMPLICATIONS

### JEVIN trial shows poor BP results

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

**1** In 1989/90 JENA's St VINcent (JEVIN) trial was set up as a prospective, population-based survey of all people aged 16–60 years with type 1 and insulin-treated type 2 diabetes who were living in Jena, Germany. Follow-up was in 1994/95 and 1999/2000.

**2** It was the goal of the trial to determine the prevalence of arterial hypertension, the quality of blood pressure (BP) control and changes in treatment modalities over 10 years.

**3** In 1999/2000, 46 (40.4%) of 114 people with type 1 diabetes and 104 (70.7%) of 147 people with insulin-treated type 2 diabetes were on BP-lowering drugs; these results were higher than in previous years.

**4** The prevalence of hypertension was 57.5% in the total population; it was higher in the insulin-treated type 2 diabetes cohort than in the type 1 diabetes group.

**5** In the whole group, mean BP improved from 1989/90–1994/95, and remained constant to the 1999/2000 examination.

**6** In 1999/2000, of participants with arterial hypertension, BP was higher than the 140/90 mmHg target in 17.5% of the type 1 diabetes group and in 42.2% of the insulin-treated type 2 diabetes group.

**7** Although the JEVIN trial shows a good improvement in the quality of BP and metabolic control over the past decade, it also shows that in many participants from both groups a good BP control has not been achieved.

Schiel R, Müller UA, Beltschikow W, Stein G (2006) Trends in the management of arterial hypertension in patients with type 1 and insulin-treated type 2 diabetes mellitus over a period of 10 years (1989/1990–1994/1995). Results of the JEVIN trial. *Journal of Diabetes and its Complications* **20**: 273–9

*'Future research should focus on discovering, defining and quantifying the pathogenesis of diabetes and the impact ethnic origin has on it.'*

*'Nearly half of all South Asian CHD deaths versus only 13% of deaths among Europeans were in people with diabetes.'*