

VASCULAR COMPLICATIONS OF DIABETES: ETHNIC DIFFERENCES

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Considerable variation in the clinical features of diabetes is known to exist among different ethnic groups (1, 2). A multinational study under the auspices of the World Health Organisation has collected data in a standardised fashion and confirmed the heterogeneity in vascular complications of diabetes amongst different national groups (3). The aim of the present study was to assess the complications of diabetes in Asians (migrants from the Indian subcontinent) and to compare these with indigenous White Caucasian diabetics in Leicester, U.K.

Methods :

456 consecutive Asian (283 male, 173 female) and 451 White Caucasian (266 male, 185 female) attending the diabetic clinic at the Leicester Royal Infirmary for at least one year were clinically assessed for vascular complications.

1. Heart Vascular Disease (HVD) : Clinical angina pectoris with ECG abnormalities, or a definite myocardial infarction.
2. Peripheral Vascular Disease (PVD) : Intermittent claudication in the calf or gangrene/ amputation in the lower limb due to vascular occlusion.
3. Cerebrovascular Disease (CVD) : Neurological deficit in the territory of a major cerebral vessel, lasting for

more than 24 hours and clinically thought to be vascular in origin

4. Eye Disease (ED) : Background, preproliferative/proliferative retinopathy under full pupillary dilatation.
5. Kidney Disease (KD) : 24 hour urine protein > 0.5 Gm with a normal IVP and absent urinary infection.

Results :

Demographic details are shown in table 1. The prevalence of vascular complications is shown in table 2.

The relative risk of vascular complications after multivariate logistic regression analysis is shown in table 3.

Discussion :

The present study was designed to examine the difference in vascular complications in two ethnic groups resident in Leicester, UK. Data have been collected in the same standardised way to avoid any observer bias. The study shows that after adjusting for variables such as age, sex, duration of diabetes, type of treatment and hypertension, there are persistent differences in the patterns of complications in these two groups. Asians are at significantly higher risk for developing kidney disease and are at lower

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risk for developing eye disease. Asian are also at higher risk for developing heart disease and lower risk for peripheral vascular disease. These differences cannot be explained by a differential degree of glycaemic control because glycosylated

haemoglobin (which is a marker of long term control of diabetes) was similar in the two groups. It would therefore, appear that these differences are probably ethnically determined.

The recent WHO study (3) has shown a marked heterogeneity in both large and small vessel disease in diabetics. Due to the diversity of the vascular disease type, it is felt that "conclusions about diabetic patients drawn from one culture cannot automatically be extrapolated to all diabetic populations." The present study confirms this heterogeneity of complications amongst Asians and indigenous White Caucasians in Leicester

Table 1
Demographic Features of Patients

	Asian	White Caucasian
Number	456	451
Male	283 (62%)	266 (59%)
Female	173 (37%)	185 (41%)
Age (yrs) Mean (SD)	52 (12)	52 (16)
Age at diagnosis, (yrs) Mean (SD)	47 (13)	40 (17)
Duration diabetes, (yrs) Mean (SD)	7 (6)	11 (.9)
Insulin taking	143 (31%)	310 (69%)
HbA, %, Mean (SD)	9.4 (2.5)	9.1 (2.3)
BM I, Mean (SD)	26 (0.04)	25 (0.04)
Hypertension (7160/95)	86 (18.5%)	85 (19.5%)

Table 3
Relative Risk (95% confidence intervals) of Vascular complications in Asians

Heart Vascular Disease	1.15 (.084-1.57)
Peripheral Vascular Disease	0.51 (0-27-0.96)
Cerebro Vascular Disease	0.61 (0.27-1.37)
Eye Disease	0.31 (0.19-0.51)
Kidney Disease	2.76 (1.66-4.58)

Table 2

Prevalence of Vascular Complications (%)

	Asian		White Caucasian	
	Male	Female	Male	Female
Heart Vascular Disease	66 (23.8)	48 (27.7)	65 (24.4)	35 (19.5)
Peripheral Vascular Disease	11 (3.9)	6 (3.5)	37(11.7)	11 (5.9)
Cerebro Vascular Disease	8 (2.8)	2 (1.2)	11 (4.0)	5 (2.7)
Eye Disease	30 (10.6)	23 (13.3)	84 (31.6)	62 (33.5)
Kidney Disease	38 (13.4)	21 (12.1)	21 (7.9)	13 (7.0)

and underscores the need for further analyses to elucidate the mechanisms by which these complications may develop.

References

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3. Diabetes Drafting Group. Prevalence of small vessel and large vessel disease in diabetic patients from 14 centres. The World Health Organization Multinational Study of Vascular Disease in Diabetics. Diabetologia; 1985; 28 : 615-40.