

## **DIABETIC NEPHROPATHY--OVERVIEW OF INDIAN DATA**

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### **Definition**

Diabetic nephropathy is defined as persistent proteinuria (protein excretion > 0.5 G per 24 hrs) in atleast four consecutive samples of 24-hr urine with an interval of atleast one month in patients without renal infection or heart insufficiency (<sup>1</sup>).

### **Natural History**

Normal urinary albumin excretion rate is < 20 micrograms per minute. Albuminuria heralds the onset of nephropathy and when GFR is about 50% of normal, serum creatinine begins to rise. Seven years after the onset of proteinuria, 50% of patients die, and one year after serum creatinine has reached 5mg/dl, 70% of patients are dead. The cause of death is uremia in only 66% of the patients developing persistent proteinuria (<sup>1</sup>).

### **Indian Data**

Between 1975 and 1977, 555 non-insulin dependent diabetics were included in a WHO study on vascular diseases, from New Delhi. Among Indians, proteinuria was present in 13.2% of males and 6.8% of female diabetics, whereas only 3.5% male and 4.5% female diabetics from London showed proteinuria. Indian NIDDM with proteinuria showed significant association with systolic blood pressure (in males), duration of diabetes (in both sexes) and serum cholesterol (in females) (<sup>2</sup>).

During a 5-year period till December 1985, 498 diabetics (including only 4 IDDs) with nephropathy were admitted to CMC hospital, Vellore. Of them, 78.3% were in 4th to 5th decade of age; about 55% had diabetes for less than 10 years and only 5.5% had the disease for more than 20 years. This was a significant observation for age and duration of diabetes and could not be related to nephropathy. Only in 56% of these patients retinopathy could be demonstrated, which is noteworthy, (<sup>3</sup>).

Indian (n : 142) and European non-insulin dependent diabetics (n : 70) attending Ealing Hospital in London were studied for microalbuminuria by radioimmunoassay. An early morning urine sample was collected and urine albumin/ creatinine ratio (ACR) was measured as an indicator for nephropathy risk in these diabetics. The ACR was more than 4 in 19% Indians and in only 7% of European diabetics. The correlation between log ACR and Hb Alc, known duration of diabetes or age were not significant within either diabetic group. Of

the Indian diabetics, 43% of hypertensives had  $ACR > 2$  compared with 19% of normotensives. Elevated ACR indicating risk for diabetic nephropathy occurs more commonly in Indians than in European NIDDM patients, and is associated with hypertension in Indians (4).

### References

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