DIABETES MELLITUS IN INDIA -Y2K NOT OK

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It may be too early to label diabetes mellitus as the disease of the coming millennium but it is very much the disease of millions and if projections are right, a quarter billion persons across the globe will be diabetic by the year 2025. A major part of this burden (75%) will be borne by developing countries and India will be having the dubious honour of being host to the maximum number of diabetics numbering about 57 millions [1]. Epidemiological profile and trends in type 2 diabetes mellitus are loaded against India. Prevalence of diabetes in India in 1951 was estimated to be <1.5% in urban and <1.0% in rural population [2]. The figures rose to 2.3% and 1.5% respectively by 1975 [3] and to 8.5% and 2.5% by 1991 [4]. Factors responsible have been variously told as increasing life expectancy and ageing population; growing per capita income and food consumption; urbanization and improved standards of living. Ironically all these are indicators of growth and development which a developing country would like to preserve. In addition to the worrisome increase in the prevalence of diabetes mellitus, the society at large will be further burdened with problems associated with complications of diabetes mellitus such as neuropathy, nephropathy, ischaemic heart disease and exotic infections with multidrug resistant organisms. Compounding factors like high prevalence of tuberculosis, unfavourable pattern of central obesity and inadequate health facilities add to the difficult survival of diabetic in India. But what is most distressing is sheer lack of awareness! We are sitting not on the edge but the tip of the volcano and not even talking about it. We are yet to recognise it as a major health problem of India. We have no concerted national programme on diabetes. We have no mention of diabetes in our school and college curriculum. We are yet to realise that diabetes is no more a disease of affluent western world but is an affliction of neo affluent developing countries.

If that be the case what is the solution. We need to

have detailed survey and epidemiological mapping to define the problem. We have to have alternative cost effective strategies for evaluation, management, monitoring and prevention of complications of diabetes. Can we afford it. Blumberg says "Therapies become more cost effective, reasonably enough; the closer they come to oneself" [5]. To begin with, at national level we may start an awareness campaign through Government controlled media. Curriculum at school and college can afford to have chapters on diabetes mellitus with details on life-style modifications which delay or defer the onset of diabetes and its complications.

There is a strong case for reassessing the available disease defining criteria in Indian context. While WHO criteria of fasting and 2 hr post glucose levels have stood the test of time, there is a strong case in favour of new American Diabetes Association criteria based only on fasting plasma glucose values [6] for mass screening and initial diagnosis despite some reservations about its sensitivity and specificity [7-9]. Mass screening methods based on capillary blood from finger prick might be of use for epidemiological mapping. The noninvasive methods like far-infra-red spectroscopy leave much to be desired but maybe valuable and cost effective in near future [10]. "Thrifty phenotype and genotype" is an acceptable hypothesis [11] but it is too early to talk about gene diagnosis.

In our scenario it is desirable to study the effect of diabetes on the natural history of tuberculosis, malaria [12] kalaazar and such tropical diseases and vice versa. Cost effective methods need to be developed for evaluating and monitoring the complications of diabetes. Colorimetric methods for detection of microalbuminuria [13] and estimation of fructosamine [14] are relevant in this context. Expiratory inspiratory ratio (EI ratio) and other bedside tests have been found useful for evaluation of diabetic autonomic neuropathy in Indian patients [15,16]. In this issue we publish a

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report on the use of nerve conduction velocities in diagnosis of diabetic neuropathy [17]. While going through the article one wonders whether the patients who required high intensity current to achieve supramaximal stimulus in somatic nerves would be more likely to have silent type of myocardial ischaemia if ever. "Thrifty phenotype" hypothesis suggests that the fetus adapts to maternal malnutrition by preserving the growth of brain, lung, adipose tissue, etc at the cost of liver, kidney and pancreas [11]. Maternal and under-five malnutrition are our major health concerns and we must work further on the hypothesis.

Management strategies centred around diet and life style modification would be cost-effective. For every 500 kCal increase in daily energy expenditure, there is a 6% decrease in the age adjusted risk of type 2 diabetes [10]. It may be prudent to defer pharmacotherapy in impaired glucose tolerance [18]. Bitter gourd, fenugreek and 'neem' extract have been claimed to be useful in our traditional systems of medicine. Further research on the metabolic effects of these plant products may be worthwhile.

A significant number of Indian women are reproductively active. With a reported incidence of 6 to 62% patients of Gestational diabetes mellitus (GDM) developing diabetes in future it is worthwhile to screen all pregnant women between 24 to 28 weeks of gestation and follow up those who have GDM [10].

To conclude, diabetes in next millennium will be an affliction of masses. Mass media has to be involved in bringing home the message that diabetes and its complications are largely preventable by life-style modifications. If a sizeable population in India is to suffer from diabetes in the decades to come it is pertinent to consider it not as a disease but a different way of living.

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