

EDITORIAL

THE CHANGING SPECTRUM OF TYPE 2 DIABETES MELLITUS

Diabetes mellitus is a global health disorder afflicting over 170 million people worldwide with an increasing incidence and prevalence. Ninety per cent of all diabetics are classified as type 2 diabetes, characterised by insulin resistance and inadequate beta cell insulin secretion. The problem has reached epidemic proportions and has extended to new populations like children and developing nations(1,2). The incidence of diabetes has increased 6% annually in the United States(3) and more than that in developing countries(4). The prevalence of diabetes in Africa ranges from 1-6%(5) although early workers in Africa reported diabetes to be a very rare and uncommon disease(6). The increase in prevalence of diabetes in Africa coincides with the transformation of societies from rural, active, agricultural lifestyles to the sedentary urban lifestyles known to be powerfully diabetogenic(7). Sedentary urban life styles also predispose individuals to additional risk factors like overweight and obesity, excessive consumption of refined carbohydrates and fatty foods, increased alcohol consumption and cigarette smoking (8).

All types of diabetes increase the risk for both microvascular and macrovascular disease including myocardial infarction, stroke, renal failure, blindness and neuropathy. The risk of developing these complications may be substantially greater in type 2 diabetes mellitus than in type 1. Hyperglycaemia affects blood vessels through several mechanisms. Acutely, it promotes blood clot formation and reduces endothelium-dependent blood flow as a result of oxidative stress(9). Long-term hyperglycaemia induces formation of advanced glycosylation end products (AGE) that damage vascular endothelium(10).

Type 2 diabetes usually runs a long indolent pre-clinical undiagnosed course. Hyperglycaemia develops gradually and initially is not severe enough for patients to develop symptoms. Vascular and other tissue damage may thus start even prior to diagnosis. By the time of diagnosis, chronic complications are already present(11). In the United Kingdom, prospective diabetes study (UKPDS) among the type 2 diabetic patients, 10% had evidence of Qwave myocardial infarction, 5% peripheral vascular disease, 19% retinopathy, 12% neuropathy and 11 % microalbuminuria at the time of diagnosis of diabetes(11). In general, earlier studies looking at the prevalence of chronic complications locally, have evaluated the whole diabetic population regardless of type of diabetes, and duration of clinical disease. With the increasing incidence and prevalence of diabetes, morbidity and mortality from chronic complications is expected to increase. Early diagnosis and management of the micro vascular complications-retinopathy, nephropathy and neuropathy – has an enormous effect in the reduction of morbidity and mortality of diabetic

patients. It is in the early stages that these complications are most amenable to treatment.

Diabetic nephropathy is arguably the most important long-term complication of diabetes mellitus and certainly one of the most expensive. In established state, it is a clinical syndrome characterised by persistent albuminuria, a relentless decline in glomerular filtration rate, raised arterial blood pressure and a high relative mortality from cardiovascular disease(12). In the past, most attention has been focussed on renal disease in type 1 patients making information on type 2 nephropathy scarce. Although the stages of development of diabetic nephropathy are well defined in type 1 diabetes, they are also used in the classification of type 2 disease(13). Otieno *et al* in this issue of the journal studied 100 diabetics and demonstrated a high prevalence of albuminuria (26%) in recently diagnosed type 2 diabetes. This is a preliminary study and an eye opener to the magnitude of problems we may find early in the type 2 diabetics. They used microalbuminuria and macroproteinuria as markers of renal disease. Microalbuminuria is a predictor of nephropathy in diabetic subjects although its predictive power is lower for type 2 diabetics than for type 1(14). Microalbuminuria seems to be not only a marker of renal disease but also of more widespread vascular damage. It is a marker of atherosclerotic disease and premature death in the type 2 diabetic population(15,16). The fact that microalbuminuria is found early in a quarter of our type 2 diabetics throws some light on the magnitude of the problem both renal and cardiovascular that we may anticipate and need to screen for even at the time of diagnosis. Microalbuminuria in type 2 diabetes may be ameliorated by dietary and oral hypoglycaemic intervention. Persistence of microalbuminuria may thus be evidence of renal changes early in the course of type 2 diabetes(16). Persistent proteinuria can also be seen in diabetics where concomitant non-diabetic glomerulopathies exist. This problem is commoner in type 2 than type 1 diabetes, especially where proteinuria exists in the absence of retinopathy. It is likely that other diabetic complications occur early in the course of type 2 diabetes and the medical practitioner has to be on the look out for the early occurrence of complications among these patients.

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