

EDITORIAL

Diabetes in Papua New Guinea

Papua New Guinea (PNG) is a developing tropical nation, and so infectious disease and maternal and child health have been the main foci of health resource allocation and medical research. However, as more and more of the population adopt aspects of the so-called western lifestyle, noncommunicable diseases such as diabetes, hypertension and coronary artery disease are becoming more common. This issue of the Journal contains papers which shed light on the mounting problem posed by diabetes mellitus.

As with other developing nations, the overwhelming majority of diabetes cases in PNG are type 2 (1) – so-called ‘non-insulin-dependent diabetes mellitus’ – although many patients end up on insulin. Type 1 (autoimmune, insulin-deficient) diabetes is very uncommon – data from the PNG Paediatric Surveillance show one of the lowest incidences recorded. It has a high mortality, but at least medium-term survival has now been achieved in some cases (2). Both types of diabetes, unless well managed, frequently result in devastating complications such as blindness, renal failure, coronary artery disease and foot amputations.

Melanesians, like many other indigenous populations, appear to have an underlying susceptibility to type 2 diabetes. This is revealed when lifestyle changes leading to greater calorie intake combine with substantially reduced levels of exercise. This is the ‘thrifty gene’ hypothesis (3). Saweri (4) reviews various surveys and studies showing that dietary patterns are steadily changing in urban areas and nearby villages. The dominant staples of root crops are being replaced by a diet with more rice and other purchased food. Fat content of food is higher, with urban adults more likely to be overweight than those in rural areas. Taufa and Benjamin (5) describe how the lifestyle changes induced by proximity to mining developments led to an increase in weight and blood pressure, although diabetes was still rare in these communities. Papua New Guineans may be further predisposed to diabetes as there is mounting evidence,

reviewed by Thorburn and Proietto (6), that low birthweight (common in PNG) increases the risk of type 2 diabetes.

Certain coastal populations, notably the Wanigelans, Tolais and Manus Islanders, appear to have a particularly high prevalence (1,3). Highlanders were initially thought to be genetically protected against diabetes. However, some studies from 1985 and afterwards began to cast some doubt on this. In this issue, Kende (7) shows that adults from the Samberigi area of the Southern Highlands who have been resident in Port Moresby for five years or longer are more overweight and have higher cholesterol, glucose and glycosylated haemoglobin (HbA1c) levels than their relatives still in the village. Diet had changed from the village diet of mainly vegetables, low in fat and protein, to a diet high in refined foods with high fat and protein. Benjamin (8) reports an unexpectedly high diabetes prevalence (defined as a fasting blood sugar level ≥ 7.0 mmol/l) of 9.4% in highlanders resident in Port Moresby attending urban clinics. Benjamin also notes an association between chewing betelnut and diabetes. If betelnut is shown by further studies to be an independent risk factor for developing diabetes, this is an important development that warrants inclusion in the public education campaign on the other dangers of betelnut consumption.

The current approach to management of diabetes is reviewed by McElduff (9). More emphasis is now placed on prevention of macrovascular complications, as well as exercise. Sulphonylureas, metformin and insulin remain the mainstays of drug therapy. These are all widely available in the main hospitals in PNG (1). New agents are steadily being developed and approved, which act on different aspects of glucose homeostasis. The cost of these agents will, at least for the next few years, place them beyond the health system in PNG.

Two international epidemiology groups have released estimates of the number of

diabetic persons in PNG in the year 2000 – one of 181,000 (10) and one of 378,300 (11). I believe the lower of these estimates is more likely to be accurate, but if so that still means that 181,000 people (7.4% of the population above 20) have diabetes. The survey of diabetes services in the country (1) shows that only around 5000 diabetic persons are known to the health services in the country. Therefore it is likely that 97% of diabetic persons in the country are undiagnosed. Even for known patients, it is likely that most are not well controlled, given limited specialized professionals, lack of laboratory HbA1c and self-monitoring capacity, and other factors. Of concern also is that type 2 diabetes is now appearing in children and adolescents in many populations overseas. In all probability this is occurring in high-prevalence groups in PNG.

Patient education is of paramount importance in diabetes care, along with an integrated team of health professionals providing care (12). However, PNG has only a handful of diabetes nurse educators, and no resident diabetologists or hospital-based dietitians (1).

Rowley and O’Dea (13) review the promising recent results from community education programs. Such programs are more likely to be effective when they are designed and implemented in collaboration with the specific targeted community. The experience of Swaby et al. (14) in Jamaica shows that, in a country which in many ways is not dissimilar to PNG, effective management can be achieved for diabetes and hypertension outside major centres.

Positive moves are occurring in PNG. The Diabetic Society of Papua New Guinea was founded in 1999, and was accepted into membership of the International Diabetes Federation. Along with other national diabetes associations in the region, we became a signatory to the Western Pacific Declaration in 2000. Awareness days have been held in Port Moresby. There is, however, a pressing need for further initiatives, if the toll of morbidity and mortality is to be reduced. Priorities are:

- a) a National Plan to address diabetes,
- b) PNG-specific awareness and education materials,

- c) effective community education programs,
- d) nationwide prevalence data, and
- e) training of diabetes health professionals.

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