



TYPE 2 DIABETES MELLITUS IN MALTA

KIRSTEN SCHEMBRI

ABSTRACT

Type 2 Diabetes Mellitus (T2DM) is a major health problem in Malta. Prevention strategies should focus on patient self-management skills, including a more active lifestyle and a balanced diet. The setting-up of a diabetes register would allow for a recall system leading to better follow-up and care of T2DM patients.

INTRODUCTION

According to data from the International Diabetes Federation (IDF), 10.1% of all 20-79 year olds in Malta suffer from T2DM.¹ Moreover, it is estimated that there are a further 12,000 undiagnosed diabetics in the Maltese population. Such data signifies the importance of devising strategies to prevent diabetes in order to control the morbidity and mortality which is brought about by its various complications. The most effective way to prevent the onset of diabetes is to work at the community level. This means that primary care has a crucial role in preventing this chronic condition. Patients suffering from diabetes should be empowered to be more responsible for the management of their condition. Psychosocial support for such patients and their families should also be reinforced. There should also be greater collaboration between healthcare professionals working in health centres, hospitals and in the private sector.

DISCUSSION LEVELS OF PREVENTION

Strategies for preventing T2DM can be implemented at all the five different levels of prevention.

1. Primordial prevention entails prevention of the disease prior to the presence of a modifiable risk factor. In this case, one would, for instance, aim to maintain a healthy weight since being obese is a significant risk factor for T2DM.

2. Primary prevention² involves preventing the onset of disease in those patients who are at risk. Patients who have impaired fasting glucose (IFG) or impaired glucose tolerance (IGT) are at risk of developing T2DM and should be closely monitored in the community. IFG is defined by an elevated fasting plasma glucose (FPG) concentration (≥ 100 and < 126 mg/dl), IGT is defined by an elevated 2-hour plasma glucose concentration (≥ 140 and < 200 mg/dl) after a 75g oral glucose tolerance test (OGTT) in the presence of an FPG concentration < 126 mg/dl.³
3. Secondary prevention involves the prevention of complications in those with established disease. This incorporates the prevention of diabetic neuropathy, retinopathy and nephropathy by regular assessment of such patients and referral for specialist care when appropriate.
4. Tertiary prevention entails reducing the risk of complications progressing further. For instance, a patient with background retinopathy should be followed-up in order to prevent the progression to pre-proliferative and proliferative retinopathy.
5. Quaternary prevention is an increasingly important theme in family medicine and refers to various means of rehabilitation and restoring function whilst preventing 'overmedicalisation', particularly in the elderly population.

Diabetes has a long preclinical phase ('prediabetes') which ranges from around 10 to 12 years. This provides an opportunity to exert effective preventive measures in order to delay the development of disease. Furthermore, individuals with undiagnosed diabetes who are experiencing symptoms (such as polyuria, polydipsia and weight loss) should be worked up immediately in order to limit the onset of comorbidities.

Unlike other diseases, the diagnosis of diabetes only requires a simple blood test, hence making the diagnostic process simple, cheap and convenient for both the clinician and the patient. Therefore, patients who present to their GP for a routine check-up should be encouraged to have their blood glucose tested regularly in order to establish their glycaemic status and address any problems when they are still in their infancy.

Several interventional studies^{4,5} demonstrate that lifestyle interventions and weight loss can actually prevent the onset of T2DM. The Diabetes Prevention Programme (DPP) trial showed that moderate weight loss, dietary changes and physical activity reduced the likelihood of patients with prediabetes to progress to T2DM by 58%.

CURBING THE DIABETES EPIDEMIC IN THE COMMUNITY SETTING

Two main areas that should be targeted are an increase in physical exercise at a national level and dietary changes.⁶ The IDF explicitly states that "Physical activity is one of the main pillars in the prevention of diabetes".⁷ It also states that 30 minutes of exercise a day can reduce the risk of diabetes by 40%.⁸

In a study by Ekelund et al⁹ it was shown that the health benefit of exercise is approximately double the expected health benefit arising from a reduction in obesity. Further to this, the UK Academy of Medicine studied the positive impact that regular physical activity could have on the nation's health. It was found



that 30 minutes of physical activity five times a week can actually prevent the onset of T2DM. In view of this, family physicians should be motivated to prescribe physical activity to their patients from early life to middle and old age.

Patients should also be actively encouraged by their family physician to follow certain simple rules with regards to a healthy balanced diet, such as:

- Including more whole grains (which are a good source of fibre) and lean sources of protein, particularly fish and vegetables;
- Avoiding white bread, white rice, mashed potatoes, processed meats, cakes and sweets;
- Avoiding products containing partially hydrogenated vegetable oils as found in margarines, packaged baked goods and fried foods. These should be substituted by polyunsaturated fats as found in liquid vegetable oils, nuts and seeds and, in particular, those found in fish;
- Avoiding breakfast cereals which contain sugar or which have a high glycaemic index. Soft beverages should be substituted by water, coffee or tea;
- Avoiding both active and passive smoking.

Above all, developing patient self-management skills is the way forward to effectively manage and care for diabetes. This means that doctors should empower their patients to learn about their condition and be able to independently control their blood glucose levels. This places patients at the centre of healthcare provision, as opposed to the paternalistic approach in which patients do not have an active role in managing their own conditions.

SCREENING

T2DM fulfils a number of criteria which makes it an excellent candidate for screening high risk populations. It has a large and growing disease burden, its natural history is well understood and there is a long asymptomatic pre-diabetic state. Screening for T2DM is low cost, safe and reliable. Such considerations are important in view of the fact that T2DM is a treatable disease and benefits from early treatment.

Earlier detection through screening policies represents a pivotal 'paradigm shift' for diabetes prevention.¹⁰ Screening provides the entry point for T2DM prevention in patients with prediabetes, thus contributing to the avoidance of complications in previously undiagnosed patients with T2DM.

INFORMATION SYSTEMS FOR T2DM PATIENTS

A diabetes clinical information system has been in place for a number of years at the diabetes clinic since the 1990s, formerly at St Luke's Hospital and now at Mater Dei Hospital. This system forms part of a database building project, the European Shared Diabetes information system. It allows for online consultation with respective consultants at Mater Dei and advice on management is given without the need to refer patients for appointments.¹¹ However, this information system is not comprehensive since not all clinicians make use of the system and the system is not available to private family doctors. An ICT-based register of patients with diabetes would allow for integrated care between public hospitals



...THE HEALTH BENEFIT OF EXERCISE IS APPROXIMATELY DOUBLE THE EXPECTED HEALTH BENEFIT ARISING FROM A REDUCTION IN OBESITY

and the community setting (health centres and the private sector). This would enable greater continuity of care amongst healthcare professionals and improve follow-up.

THE WAY FORWARD

T2DM is an ideal condition for screening. It is being proposed that, at least every two years, screening is carried out in health centres or in private clinics in those patients who have at least one of the following risk factors.

- Obese patients (BMI ≥ 30 kg/m²) over 18 years of age;
- Overweight patients (BMI 25–29.9 kg/m²) between the age of 18 and 44 with a family history of diabetes;
- All patients above the age of 45;
- Adults with a systolic blood pressure greater than 130mmHg and/or cardiovascular disease;
- Previous occurrence of diabetes in pregnancy;
- Patients who are on medications that predispose to T2DM. Such drugs include nicotinic acid, glucocorticoids, thiazides, phenytoin and anti-psychotics.

CONCLUSION

The care given to T2DM patients should address the biological as well as the psychosocial aspects of the condition. Healthcare professionals caring for patients with diabetes should be trained to recognise signs and symptoms of psychological distress. Patients with poor social support should be appropriately referred to psychologists and social workers since social exclusion renders management of diabetes even more difficult. Holistic care can only be achieved when patients are cared for by a multidisciplinary team consisting of doctors, diabetes nurse specialists, dieticians, podiatrists and psychologists. ❄