International Diabetes Federation definition of the metabolic syndrome

Presence of central obesity—waist circumference varies with ethnicity. If the body-mass index is >30 kg/m², central obesity can be assumed.

Plus any two of the following:

- Raised triglyceride concentration >1.7 mmol/L (150 mg/dL) or specific treatment for this lipid abnormality
- Reduced HDL cholesterol level <1.0 mmol/L (40 mg/dL) in men or <1.3 mmol/L (50 mg/dL) in women, or specific treatment for this lipid abnormality
- Raised blood pressure >130/85 mmHg or treatment for previously diagnosed hypertension
- Raised fasting plasma glucose level >5.6 mmol/L (100 mg/dL) or previously diagnosed type 2 diabetes mellitus. If the fasting glucose level is >5.6 mmol/L (100 mg/dL), an oral glucose tolerance test is strongly recommended, but is not necessary, to diagnose the syndrome

Table 1.1 HDL, high-density lipoprotein.

What is the burden of type 2 diabetes mellitus?

The IDF estimates that the overall global prevalence of type 2 diabetes mellitus is about 5%, of which only half of the patients are clinically diagnosed. Prevalence of the disease is increasing rapidly (it is epidemic in many developing and newly industrialized countries), primarily a consequence of the increasing prevalence of obesity, particularly in children and adolescents. The consequent rise in the healthcare burden and costs owes not only to the greater number of patients with the disease itself, but also to the effect of long-term vascular complications.

Who is at risk of type 2 diabetes mellitus?

The greater the number of the following risk factors an individual has, the greater the probability of development of type 2 diabetes mellitus:

- Obesity, particularly central/abdominal obesity (an 'apple'-shaped figure).

- Advancing age.
- Sedentary lifestyle.
- Family history.
- History of diabetes in pregnancy.
- Certain ethnic groups.
- Hypertension.
- Dyslipidaemia.
- IGT.

What are the long-term complications of type 2 diabetes mellitus?

The complications of type 2 diabetes mellitus can be classified as follows:

- Acute complications – ketoacidosis and coma.
- Chronic complications – microvascular (eg, retinopathy, nephropathy, neuropathy and foot problems) or macrovascular (eg, CV [coronary and cerebrovascular] disease, peripheral vascular disease [PVD] or heart failure). Microvascular diseases are specific to diabetes mellitus, but macrovascular disease commonly seen in diabetes mellitus is broadly the same as that seen in people without diabetes mellitus; however, the difference in diabetes mellitus is the increased risk. In fact, the increase in risk starts with IGT, below the level of blood glucose used to diagnose diabetes mellitus.

Complications result in increased disability, reduced life expectancy and enormous health costs; about 80% of people with type 2 diabetes mellitus will die from CV disease.

Microalbuminuria (in which the urine contains traces of protein undetected by a standard dipstick test; urinary albumin concentration of ≥20 mg/L or an albumin:creatinine ratio [ACR] of ≥2.5 mg/mmol in men or ≥3.5 mg/mmol in women) is a predictor of the development of microvascular and macrovascular (renal and CV) disease. The finding of microalbuminuria indicates the need for assessment of microvascular complications and tighter control of CV risk factors (eg, adverse lipid profile,