Diabetes in the Middle East

The prevalence of type 2 diabetes mellitus is increasing worldwide. The disease results from a complex interaction of genetic and environmental factors. So far, more than 40 genetic loci have been convincingly associated with an increased likelihood of type 2 diabetes. Fuelled by rapid urbanisation, changes in nutrition, and increases in sedentary lifestyles, the prevalence of type 2 diabetes has increased in parallel with the rise in prevalence of obesity and metabolic syndrome. Such transitions have rapidly occurred in developing countries; thus, a more striking increase in the prevalence of type 2 diabetes is expected in developing countries than was seen in developed nations.

The Middle East is expected to have the greatest increase worldwide in the prevalence of type 2 diabetes by 2030. WHO suggests that, between 2006 and 2015, the largest increase in deaths from chronic diseases will occur in Africa and the Middle East. A systematic review of 24 studies showed that the pooled prevalence of type 2 diabetes in the Middle East was 10·5%. Each year, more than 1% of the Iranian urban population aged 20 years or older develop type 2 diabetes. Several factors have contributed to this increase in the Middle East, including high rates of consumption of refined carbohydrates (eg, white rice) and low levels of physical activity compared with previous generations.

Type 2 diabetes places a heavy health and economic burden on many countries in the Middle East. If left untreated, it can predispose patients to diabetic nephropathy, retinopathy, coronary artery disease, peripheral neuropathy, and CNS diseases. Indeed, the disease is the most common cause of end-stage renal disease worldwide. In many countries in the region, patients with type 2 diabetes are screened for urinary enzymes and microalbuminuria as early indicators of kidney involvement. Diabetes is also associated with foot ulcers, which in turn are linked to high mortality and morbidity—in a study of 148 Iranian patients with type 2 diabetes, 12·8% were at high risk for foot ulceration.

Early diagnosis and appropriate management of type 2 diabetes and prevention through control of preventable risk factors are of paramount importance. Saudi Arabia, where the age-adjusted prevalence of type 2 diabetes is 31·6%, has a national diabetes registry, and Iran has started screening people for diabetes and prediabetes. Moreover, establishment of some health-care schemes, such as the Behvarz system that was launched in Iran almost 50 years ago, has improved the health of individuals living in rural areas. The system has led to improved control of fasting plasma glucose for patients with type 2 diabetes through employment of community health workers to provide active surveillance and allow regular follow-up of patients.

For more on the **Behvarz system** see **Articles** *Lancet* 2012; **379:** 47–54. http://dx.doi.org/10.1016/S0140-6736(11)61349-4

Islam is the most common religion in the Middle East. During Ramadan, which began in late July this year, Muslims undertake a period of ritual fasting during which they refrain from eating and drinking and having sexual intercourse from dawn until dusk. Ritual fasting is obligatory for all healthy Muslims, although some individuals who believe fasting might be harmful to their health are exempted. Every year, more than 50 million Muslims with type 2 diabetes fast during Ramadan. Health-care providers need to be aware of the nature of this ritual fasting and its risks to people with type 2 diabetes. According to most religious officials, people who fast are not allowed to take drugs orally or via injection. Hypoglycaemia when fasting is the greatest health risk for patients with type 2 diabetes. Adjustment of drug doses during the month of Ramadan is an important challenge for doctors who care for these patients.

For the **systematic review** see *Eur J Cardiovasc Prev Rehab* 2009; **16:** 268–80. DOI:10.1097/HJR.0b013e328322ca1b

Although management of patients with type 2 diabetes is important, emphasis should be placed on preventive measures. Several randomised clinical trials have suggested that diabetes is preventable through control of diet and exercise. One controlled study showed a risk reduction of 31% with dietary changes, a 46% risk reduction with increased exercise, and a 42% risk reduction with both interventions. The public and policymakers in the Middle East need to be more aware of the risk factors of diabetes and national screening programmes should be implemented to diagnose individuals with prediabetes so that early intervention can protect them from complications.

For more on **prevention of diabetes** see *Diabetes Care* 1997; **20:** 537–44. http://care.diabetesjournals.org/content/20/4/537.full.pdf

For more on **prediabetes** see **Articles** *Lancet* 2012; **379:** 2243–51. http://dx.doi.org/10.1016/S0140-6736(12)60525-X

Farrokh Habibzadeh
The Lancet Middle East Edition, NIOC Medical Education and Research Center, Shiraz, Iran