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Review Article

Obesity and diabetes mellitus in the Arab world

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الملخص

أدت السمنة إلى زيادة انتشار داء السكري من النوع ٢ بين الشعوب العربية على مدى العقدين الماضيين. وقد وضحت البحوث أن السمنة تصاحَب بمقاومة الأنسولين، وحينما تقترن هذه المقاومة مع نقص هرمون الأنسولين، يؤديان إلى داء السكري من النوع ٢.

وقد تناولنا في هذه المراجعة الدراسات المنشورة عن انتشار، وعوامل خطر، السمنة، والجينات الوراثية للسمنة في الشعوب العربية، وكذلك آلية حصول السمنة. كما تطرقنا إلى العوائق التي يواجهها مريض السمنة في العالم العربي للتخلص من الوزن الزائد، وألقينا الضوء على استراتيجيات علاج السمنة في الشعوب العربية.

الكلمات المفتاحية: السمنة؛ داء السكرى من النوع ٢؛ العرب

Abstract

Obesity has led to a dramatic increase in the incidence of type 2 diabetes mellitus among the Arab population over the past 2 decades. Obesity is strongly associated with insulin resistance, which, when coupled with relative insulin deficiency, leads to the development of overt type 2 diabetes mellitus. This comprehensive review summarizes the key findings in the published literature pertaining to the prevalence, risk factors, and genetics of obesity in the Arab population. The mechanisms of obesity-associated diabetes mellitus are also elaborated. In addition, we have reviewed several management strategies and the perceived barriers to their effectiveness in obese Arabs.

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FLSEVIER Production and hosting by Elsevier Keywords: Arabs; Diabetes mellitus type 2; Genetics; Obesity

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Definition of obesity

Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health. Body mass index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m^2) . BMI greater than or equal to 25 is considered to be overweight, and BMI greater than or equal to 30 is considered to be obesity,³ which is divided into 3 classes. Class I obesity is BMI 30-35 kg/m², Class II obesity is BMI 35-40 kg/m² and Class 3 is severe obesity, which is BMI greater than or equal to 40 kg/m^2 . Figure 1A shows WHO age-standardized mean BMI estimates of different Arab countries in 2010 for males, and Figure 1B shows these estimates for females.

Waist circumference provides information on central adiposity beyond that provided by BMI. Central adiposity correlates well with visceral adiposity, which elevates the risk for such obesity-related diseases as diabetes, hypertension, and nonalcoholic fatty liver disease. Waist circumference should be measured over the iliac crests in a horizontal plane after the patient exhales following a normal breath. A waist circumference of \geq 35 inches (88 cm) for women and \geq 40 inches (102 cm) for men is considered elevated.³

Prevalence of obesity in the Arab world

Several studies have addressed the prevalence of obesity and diabetes in different Arab countries. The prevalence of

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Figure 1: A. Mean BMI distribution of Arab World Males. B. Mean BMI distribution of Arab World Females.

obesity parallels increased industrial development, which, in the Arabian Gulf, is related to a significant growth in income from rich deposits of oil reserves and resulting rapid urbanization and improved living conditions. In 2014, the World Health Organization (WHO) released a data report on BMI and obesity prevalence in both genders that showed that in most Arab countries, the prevalence is mostly increasing compared to 2010.⁴ This can be a substantial health crisis given that obesity is the 6th most important risk factor for worldwide disease burden.⁵ Over the last 2 decades, several studies were performed to determine the prevalence of obesity. The sample sizes in those studies ranged from several hundreds to almost 20,000 participants.

Bacchus et al.⁶ found that 65% of patients with diabetes were overweight in 1982, while in 1987, Fatani et al.⁷ found that 41% of a diabetes patient population was obese. Both of those studies were performed in rural areas. In Bahrain in 1996 Farouq et al.⁸ found that the prevalence of obesity reached up to 32% in patients with diabetes compared to 24% in controls. In 1997 a group in Download English Version:

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