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Proceedings

Obesity: A Gateway Disease with a Rising Prevalence

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Key Words

Obesity · Prevalence · Non-communicable diseases · Comorbidities

The European and Global Burden of Obesity

During the past decades, great advancement in the molecular underpinnings related to obesity, ranging from adipobiology to the neuroendocrine regulation of energy homeostasis and encompassing interorgan cross-talk, inflammation, food composition, reward mechanisms, and genetics, among others, has taken place [1–19]. However, to the despair of both patients and healthcare professionals, this huge understanding has not effectively translated into an evident improvement in the management of obesity with clear-cut positive epidemiological, clinical, and societal outcomes.

Indications for the stagnation of the obesity epidemic are not visible on the horizon. While in 2008, 1.5 billion adults, i.e. 20 years of age and older, were overweight with an estimated 500 million adults worldwide being obese (over 200 million men and nearly 300 million women), the figures of affected individuals are soaring unabatedly. In addition, more than 40 million children under the age of 5 years were overweight in 2010 [20, 21]. It is important to note that severe obesity (i.e. a BMI > 35 kg/m²) is a rapidly growing segment of the obesity epidemic in which the pernicious effects of the disease are especially detrimental. Lately, special attention has been drawn to the high prevalence of overweight in different countries and age groups, as well as the high prevalence of physical inactivity and unhealthy diets [22, 23]. For all these reasons, the World Health Organization (WHO) has declared obesity as the largest global chronic health problem in adults which is increasingly turning into a more serious world health problem than malnutrition. If recent trends continue, esti-

mations for 2030 foresee that 60% of the world's population, i.e. 3.3 billion people, could be overweight (2.2 billion) or obese (1.1 billion). Across Europe, the findings of foresight studies towards 2030 parallel the predicted worldwide rapid increases in obesity and require thoughtful consideration [24].

The Silent Menace of Obesity

According to the WHO, overweight and obesity are considered the fifth leading risk for global deaths [20]. In spite of obesity being a frequent, serious, complex, and chronic disease that represents a major public health concern both at the European and the global level, clear opportunities for its diagnosis and management are being missed [25]. Importantly, the consequences of excess weight impact both directly and indirectly on a broad range of health aspects, expanding from single individuals up to whole nations. Obesity increases a person's risk of developing a number of non-communicable diseases (NCDs) such as cardiovascular disease, diabetes, and cancer [26]. The WHO emphasizes that 44% of the diabetes burden, 23% of the ischaemic heart disease burden, and approximately 7–41% of certain cancer burdens are attributable to overweight and obesity [20, 27]. In the majority of European countries, overweight and obesity are responsible for about 80% of the cases of type 2 diabetes, 35% of ischaemic heart disease, and 55% of hypertensive disease among adults. This places obesity at the forefront of the fight against NCDs. Moreover, the risk of developing more than one of these comorbidities also increases with an elevated body weight. It is noteworthy that lifestyle interventions with weight loss have been reported to significantly reduce the risk of progression to type 2 diabetes in large-scale clinical studies with long-term follow-up [28–31].

Excess body weight also puts patients at a higher risk of stroke, sleep apnoea, dyslipidaemia, and other serious obesity-associated diseases. Furthermore, increased adiposity is accompanied by a chronic low-grade inflammation with elevated proinflammatory cytokines that elevate the cardiometabolic risk but decrease following weight loss [32]. Moreover, it has been recently reported that obese individuals are at an increased risk for adverse long-term outcomes even in the absence of metabolic alterations, thereby indicating that there is no healthy pattern of increased body weight [33, 34]. In addition, a range of debilitating conditions such as osteoarthritis, respiratory difficulties, gallbladder disease, infertility, and psychological problems, which lead to a reduced life expectancy and quality of life as well as disability, are extremely costly in terms of both absence from work and use of health resources. In spite of huge efforts and research investment, obesity has become one of the leading causes of death and disability worldwide. It is estimated that obesity is responsible for 2–8% of health costs and 10–13% of deaths in the European region [20, 35, 36].

The Challenge of Obesity

The disease burden in public health has moved from acute disease situations towards chronic diseases and NCDs, thereby representing a paradigm change which requires a shift concerning how prevention and care are provided [37]. Obesity threatens to overwhelm societies and healthcare systems as it complicates clinical care with its associated diseases, increases healthcare costs, limits quality of life as well as life expectancy, and affects socio-economic development. Thus, obesity should be a top priority for a united Europe, with increased commitment for concerted, coordinated, and specific actions focused on strategically tackling the epidemic. Given that the causes of obesity are embedded in an extraordi-

narily complex biological system set within an equally complicated environmental and societal framework, careful attention should be paid to making healthy choices about food, hydration, and exercise accessible to citizens.

A comprehensive, realistic, pro-active, long-term strategy with multidimensional initiatives and fresh perspectives on easily applicable preventive measures is required to design a sustainable response to deal with the challenges posed by this epidemic. Moreover, irrespective of their BMI, the identification of those individuals truly requiring healthcare and a personalised approach should be encouraged via the instauration and implementation of programmes for early competent prevention, diagnosis, and management with thoughtful, innovative, and evidence-based interventions addressing both individual citizens and the environmental context they live in.

Integrating and mobilising all relevant scientific disciplines, i.e. building true trans-disciplinary research, is needed to address obesity as a complex phenomenon considering biological as well as psychosocial interindividual variability. In this regard, improvement and development of our knowledge as well as understanding of disease aetiology at the individual, population, and societal level will only derive from a combined accurate assessment placing the emphasis on detailed analyses of the many biologic, environmental, cultural, geographical, and social influences.

Disclosure Statement

No conflicts of interest.

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