

Excess Weight, Obesity, Diabetes (Type-2), and Clinical Complications



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Editorial

According to the National Institutes of Diabetes, Digestive and Kidney Diseases of the National Institute of Health, USA, approximately two-thirds of all adults in the USA (167 million), are overweight and a third is obese. The World Health Organization (WHO) estimates that there are 1.3 billion overweight adults globally. Of these 300 million are clinically obese. The global increase in incidence of type-2 diabetes among adults has more than doubled since 1980, from 153 million to 422 million people, according to a study done in 2014, involving 2.7 million people from around the world. These numbers and statistics keep changing every year, in view of the rapidity with which these twin epidemics are increasing worldwide. Cardiometabolic diseases (CMDs), including hypertension, obesity and Type-2 diabetes, are a growing concern and have become an epidemic worldwide [1-9]. In view of this global concern, professionals and professional societies are putting out current revised guidelines to manage better, these diseases.

Excess weight and obesity are the major driving forces for global diabetic epidemic. Both excess weight and type-2 diabetes lead to various vasculopathies, clinical complications, and ultimately result in the precipitation of acute vascular events, heart attack or stroke. It is estimated, that current worldwide estimate of overweight individuals (BMI>25Kg/m²) will increase from 1.3 billion to 2.0 billion by 2030. In a recent publication in the journal of clinical and preventive cardiology, I discussed some of the recent developments for reducing or reversing cardio metabolic diseases (1). Studies at the diabetes centre at Leicester University, England have demonstrated (personal communication) that 6 hours of standing (during working hours) burns 300 calories (equivalent to walking two hours on the treadmill). On the other hand, Dallas Heart Study has shown that 10 hours of sitting can increase the levels of circulating cardiac troponin, which is indicative of silent ischemia of the heart. We are not sure whether simply standing and burning calories alone will be beneficial to the heart or it needs intermittent high or moderate intensity exercise to keep fit. Do the

people who stand and work all day also suffer from silent ischemia of the heart?

Professor Roy Taylor of Newcastle University, England has demonstrated that even in a well characterized diabetic, a low calorie diet will reverse the diabetes. Can one live a normal healthy life with such a low calorie (600 calorie per day) diet? A similar study with a very low calorie diet showed that although one can reduce the body fat drastically from such a diet in a very short time, the effect of such a diet was not in the best interest, as far as the health of the heart was concerned. According to a recent study by Dr Jennifer Rayner, at the Oxford University, UK, a crash diet with low calories (600-800 cal.) may harm heart's ability to pump blood. Prof. Stephen Phinney and associates at the University of California, Davis, in their 12-week study put 40 subjects on a 1500-calorie diet. Half of the subjects were on low-fat high-carb diet and the other half, on low carb and high-fat diet. Despite the high fat that the low-carb diet group had, at the end of the study the levels of triglycerides had dropped by 50% in this group. Levels of good cholesterol had increased by 15%. They concluded that the dietary fat intake was not directly related to blood fat (Lipids.43:65-77, 2008). "Fat is not the problem", says Dr. Walter Willet, Chairman of the Department of Nutrition at the Harvard School of Public Health (LA Times 21/20/2016). "If Americans could eliminate sugary beverages, potatoes, white bread, pasta, white rice and sugary snacks, we would wipe out almost all the problems we have with excess weight and diabetes and other metabolic diseases.

The Lancet's (The Lancet: Obesity Series: 2015; Lancet 378:838-47, 2011) five messages on obesity included; the obesity will not be reversed without government leadership; business "as usual" would be costly in terms of population health, health-care expenses, and loss of productivity; assumptions about sustainability of weight are wrong; we need to accurately monitor and evaluate basic population weight and intervention outcomes; a systems approach is needed with multiple sectors involved. According to most estimates, nothing has changed since the Lancet published the first series. Indeed,

according to the NCD Risk Factor Collaboration, if the post-2000 trends continue, the global target of halting the rise in prevalence of metabolic diseases by 2025 to 2020 levels is lower than 1 percent (Lancet April 2016). Contrary to these expectations, increases in overweight and obesity in adults are widely projected to increase in the coming decades. Roberto et al in their article in the Lancet say “No country has reversed obesity epidemic” (Lancet 385:2400-09, 2015). The World Health Organization’s (WHO) Global Action Plan for the Prevention and Control of Non-Communicable Diseases has clear agreements on what strategies should be implemented and tested to address obesity (WHO: 2013-2020). In this connection, it is worthwhile considering the position of the Academy of Nutrition and Dietetics, “It is the position of the Academy of Nutrition and Dietetics that successful treatment of overweight and obesity in adults requires adoption and maintenance of lifestyle behaviors contributing to both dietary intake and physical activity” (J. Acad. Nutr Diet. 116:129-47, 2016). There is considerable interest in the ketogenic diet for weight loss and management of type-2 diabetes. A meta-analysis of 13 randomized controlled studies suggested that people on ketogenic diets tend to lose more weight and keep more off than people on low fat diets (JAMA. 2018;319(3):215-217. doi:10.1001/jama.2017.20639). Researchers are speculating, that someday the ketogenic diet may be a better choice as a nutritional therapy for excess weight, type-2 diabetes, obesity, Alzheimer’s disease (<http://dx.doi.org/10.1016/j.fshw.2016.10.003>) and some types of cancer.

There is a global debate about the beneficial effects or lack of such effect in treating the risk factors for CMDs versus the robust management of the disease itself as suggested by Professor Jay Cohn and associates at the Rasmussen Center for Cardiovascular Disease Prevention, University of Minnesota. It is generally well accepted that the Western medicine is disease centric in its approach to disease management. It is also claimed that the traditional medicine as practiced in India and China or more geared at holistic personalized medicine and the prevention of the disease. However, neither the Western Medicine nor the Traditional Medicine have

successfully managed to lower the incidence of CMDs worldwide. We believe that early detection of the risks for development of CMDs and robust management of these risks is the best choice we have currently. With so many controversies popping up every day, it is not certain as to finally who will decide as to what is the best choice for the management of CMDs, big data-artificial intelligence (machine learning), IBM-Watson or the experienced clinician?

It gives me great pleasure to write this editorial, which expresses some of my views on these topics of great public health importance; excess weight and type-2 diabetes. I hope the Journal, Archives of Obesity and Diabetes will provide a platform for discussion on various strategies and action plans for the reduction and reversal of excess weight, obesity, diabetes, and their clinical complications..

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