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Mini Review

Treating Obesity: Are Fad Diets Effective?

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Introduction

South Africa's prevalence of obesity is in an upward trend with 32 % of females and 25% of males classified as overweight or obese[1]. Despite the complexity and difficulty of successful lifestyle intervention, this remains the first line of treatment recommended.

As a result of this, we as practitioners are continuously challenged by our patients of fad diets that promise, fast and effort less weight loss results. The diets currently enjoying the highest popularity are the high-protein Dukan and Paleo diets and the high-fat ketogenic (Banting) diet advocated by Prof Tim Noakes.

Psychological, socio-economic, cultural, genetic and logistic (lifestyle) factors influence not only what patients consume, but also how much, when and why they eat. Although the necessity of a calorie deficit to facilitate fat loss is clear, much debate centers around which macronutrient composition is most beneficial. Sacks[2] compared four diets with varying fat, protein and carbohydrate macronutrient compositions ranging from 20/15/65 % to 40/25/35 % respectively. The effect these various compositions had on weight loss, levels of satiety, hunger and satisfaction were similar for all diets. Furthermore, they found cravings, fullness, hunger and diet satisfaction scores to be similar at 6 months and two years among the different diets investigated.

A systemic review and Meta -analysis comparing the effect of low carbohydrate diets versus isoenergetic balanced diets on weight loss and cardio vascular risk factors. The authors came to the conclusion that there is little or no difference in weight loss or cardio vascular risk factors in both overweight and obese patients with or without Type 2 Diabetes Mellitus (T 2 DM). The authors reported the intensity and duration of the intervention, adherence and the level of self- management of the patients as being more significant factors predicting success than the macro nutrient distribution of the diet[2-6].

The American Dietetic Association (ADA) describes a low- to moderate-carbohydrate diet as containing 130 g (26-45 % of an 8400 kJ energy intake per day), while an intake of less than 30 g (6 % of total energy intake) defines a ketogenic diet. Johnston[7] found no difference in weight loss and insulin resistance in 20 obese individuals following a moderate low-carbohydrate, low-fat diet (40/30 %) compared to a ketogenic low-carbohydrate, high-fat diet (5/60 %). What was significant, was the ketogenic group reported negative emotions and a low desire to be physically active. Bravata[8] undertook a systematic review on the efficacy and safety of low-carbohydrate diets and reported postural hypotension, fatigue, constipation and nephrolithiasis as concerns with regard to the ketogenic diets[6-7].

Traditionally a high saturated fatty acid (SFA) intake affecting LDL cholesterol (LDL-C) has been associated with an increased risk for cardiovascular disease (CVD). Recent research however has revealed that the risk analysis is rather complex and that individuals with a high SFA intake had a similar incidence of developing CVD as individuals with a lower SFA intake[9-11]. This finding is used to promote a high saturated fat intake by followers of low-carbohyderate, high fat, high protein diet (low CHO HF HP) regimes.

It is important to note that to obtain correct nutritional data of subjects in free living conditions is challenging. Patients do not consume single nutrients or single foods but a variety of different foods every day which results in a wide variety of nutrient intake. Research suggests that the effect of SFA on total cholesterol (TC) and LDL-C depends on the amount of unsaturated fatty acids, fiber, micro nutrients and phyto – nutrients and cholesterol in the background diet. It seems that detrimental effects occur when the diet is low in unsaturated fats and high in cholesterol and red meat typical of the ketogenic HP/HF regimes. Unlimited intake of SFA as promoted by ketogenic HP, HF diets not only contribute to the development of insulin resistance but through intracellular TG lipolysis and fatty acid esterification have a greater insulinotropic effect on the B cells that can contribute to B cell exhaustion[11-15].

It is recommended to replace dietary SFA with monounsaturated fat (MUFA). The latter has anti-inflammatory, anti-oxidant effects and also contributes through cell membrane integrity to increased insulin sensitivity[16,17].

It is established that a high CHO diet of poor quality (high in refined carbohydrate and sugars) can contribute through chronic hyperglycaemia, and hypertriglyceridaemia not only to

an atherogenic lipoprotein profile (high TG, low HDL-C and small dense LDL-C) but also aggravates the inflammatory and oxidative stress processes that ultimately all contribute to beta cell failure, endothelial dysfunction and atherosclerosis.

In treating patients with CVD, it seems appropriate to calculate a moderate intake of carbohydrates (40 to 45 %) of high-quality carbohydrates consisting of high-fiber whole grains, fresh fruit and vegetables. These foods have cardio protective effects due to the synergistic effect the phytonutrients, vitamins and minerals (folic acid, magnesium, Vitamin E and potassium), fiber and anti-oxidants generated in combination with unsaturated fats, soya and nuts[18-20].

Conclusion

Fad diets proposing extreme macronutrient manipulations and exclusions may be beneficial for a few highly motivated patients in the short term. In contrast an eating plan consisting of a moderate distribution of nutrients enhances adherence and the following steps have been identified as critical for successful lifestyle intervention.

Acquisition of knowledge

Patients need to be educated in the composition and classification of foods and how these affect weight and glycaemic control.

Application of knowledge

Patients need to be provided with the practical tools such as an individualized eating plan, seven day cycle menu, shopping list and recipes that meet the family's lifestyle, culture, social and economic status and preferences.

Practicing the knowledge to create healthy eating habits

Significant evidence showed ongoing monitoring (support, motivation and accountability) as critical to assist patients within the first six months of the intervention. This process offer opportunity for patients to develop skills such as goal setting, self-monitoring, problem solving, relapse handling, controlling of internal/ external stimuli and reconstructive thinking. These skills together with positive feedback and reinforcement enhance self – efficacy important to create and substain healthy eating habits as part of a lifestyle[21].

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