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Impact of weight loss medications on glycemic control

The International Obesity Task Force estimates that, at least 1.1 billion adults worldwide are overweight including 312 million who are obese. Obesity is associated with several comorbidities including, type 2 diabetes, dyslipidemia, and hypertension which ultimately increase the risk of coronary artery disease. Medical treatment for obesity has always been a challenge and numerous once promising weight loss drugs have been abandoned because of serious toxic effects. Recently a couple of medications approved by the FDA showed a promising effect on weight reduction as well as it improved glycemic control.

Lorcaserin is a selective serotonin receptor agonist which has been tested as an add-on to metformin in diabetics and resulted in a mean weight change of $-4.5 \pm 0.35\%$ compared to $-1.5 \pm 0.36\%$ with placebo. HbA1c decreased by an approximate of 0.9% in the lorcaserin group compared to 0.4% with placebo. More recently by using the DXA scan, lorcaserin over 12 months targeted the fat mass and spared the lean mass.

Phentermine/topiramate is a central norepinephrine-releasing/anti-epilepsy drug which has proven to be an effective weight loss medication. In a RCT including patients with BMI of ≥ 27 with an approximate 70% of them were diabetics, a mean weight change of -9% compared to -1.2% in placebo. Also, HbA1c decreased by 0.4% compared to 0.1% in the placebo arm. Fasting insulin and glucose level decreased significantly in the active arm. Sleep apnea is frequently found in diabetics and it has been associated with poor glycemic control. Recent 28 weeks trial showed a twofold improvement in the mean apnea-hypopnea index (AHI) in diabetics with sleep apnea which is also very promising.

Naltrexone/bupropion sustained-release is an experimental treatment for obesity which is not yet approved by the FDA but has shown a promising result. Recently published RCT in diabetics with a mean BMI of 37, it resulted in a weight reduction of 5% compared to 1.8% in the placebo arm. HbA1c decreased by 0.6% compared to 0.1% in the placebo arm, also triglyceride and HDL also improved significantly in the active arm.

Although data are promising about those medications since they not only reduce the weight but rather improve glycemic control and some cardiovascular indices, but still awaiting long term data with cardiovascular safety outcome which will be very important to see.

Biography

Khaled A Alswat, is an Assistant Professor of Medicine at Taif University and a Consultant physician of Endocrinology and Diabetes at King Abdulaziz Specialist Hospital, Tertiary and Referral Center in the Western Region, Saudi Arabia. With outstanding educational and research activities, he received his post-graduate training in Internal Medicine and Endocrinology from the George Washington University, Washington DC, USA. He is Certified Clinical Densitometrist by the International Society for Clinical Densitometry (ISCD). Active member of numerous Endocrine organizations. Actively participated in many Endocrine meetings including the Endocrine Society 2011 & 2012 meetings where some of his research was selected to be in the presidential session and amongst the top studies that received special mention in US media coverage.

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