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Effects of bariatric surgery on glucose control, weight reduction and disease remission among patients with type 2 diabetes mellitus: A systematic review and meta-analysis

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Abstract

Background: Bariatric procedures aim to reduce weight and appear to have independent metabolic benefits such as blood glucose control.

Objective: To determine the effectiveness of Bariatric Surgery versus conventional medical therapy on glucose control, weight reduction and disease remission among patients with type 2 diabetes mellitus

Conduct of study: Published English-written RCTs from Jan 1, 1990 – June 30, 2012 were included. Participants were type 2 diabetic patients treated with any conventional bariatric procedure, controls were managed medically, and outcomes werequantitatively measured biochemical parameters for blood glucose control.Values of Hba1c, body weight and remission rate were obtained. Heterogeneity was evaluated statistically. Sensitivity and subgroup analyses were performed appropriately.

Results: Among 16 articles retrieved, 3 studies met the inclusion criteria. A total of 170 patients underwent bariatric surgery. There is lower HbA1c levels among patients who underwent bariatric surgery compared to those who were given medical therapy alone (p value = 0.03). Likewise, statistically significant lower post-treatment weight is seen among patients who underwent surgery (p value = 0.01). Higher remission rate was also achieved after Bariatric Surgery (p <0.00001), however there is significant heterogeneity (Chi ^{2} = 3.02; I^2 = 0%).

Conclusion: Among participants, better glycemic control and significantly lower body weight were achieved after Bariatric surgery compared to medical therapy alone. These beneficial effects were seen and sustained for1 to 2 years following the procedure. A substantial number of patients also achieved disease remission. However, there is high incidence of adverse effectsmainly nutrition-related complications and hypoglycemia.

Biography

Dr. Dianne Kristine Joy Closa, 28 year oldfrom Philippines, completed her Medicine Degree at PamantasanngLungsodngMaynila (University of the City of Manila) in 2010, Clinical Internship at Chinese General Hospital and Medical Center in 2011 and currently on 2nd year of Residency Training at St. Luke's Medical Center, Department of Internal Medicine. She has authored/co-authored 3 unpublished clinical studies and has participated in poster presentations in St. Luke's Medical Center and Philippine Society of Endocrine and Metabolism.