Insulin Resistance Outcomes Following Preoperative Oral Carbohydrate Loading in Bariatric Surgery Patients: A Randomized Controlled Trial

Pattharasai Kachornvitaya, Naranon Boonyuen, Sarunnuch Panyavorakhunchai, Pattarose Sawangsri, Aisawan Asumpinawong, Sathientpong Chantawibul, Suthep Udomsawaengsup

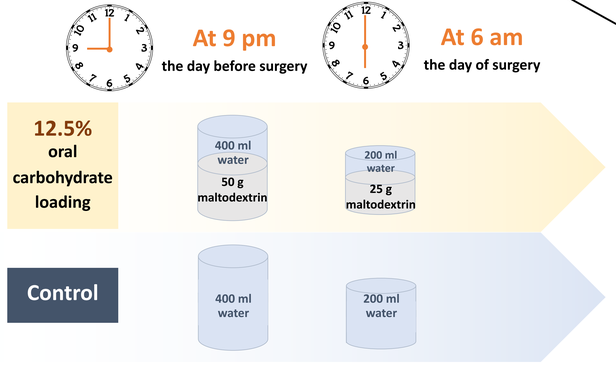
Chula Bariatric and Metabolic Institue, Department of Surgery, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand.

INTRODUCTION

Enhanced Recovery After Surgery (ERAS) protocol in bariatric surgery is well-accepted worldwide. Preoperative oral carbohydrate loading is one of the components of ERAS protocol which has scarce data in bariatric patients. Preoperative fasting increases insulin resistance and inflammatory stress responses which can be reduced by preoperative oral carbohydrate loading.

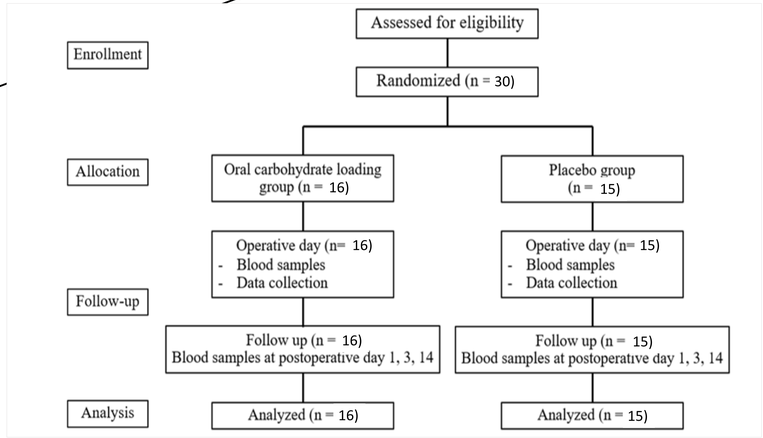
OBJECTIVES

This study aimed to evaluate the effect of preoperative oral carbohydrate loading on insulin resistance and inflammatory outcomes compare with conventional fasting protocol.



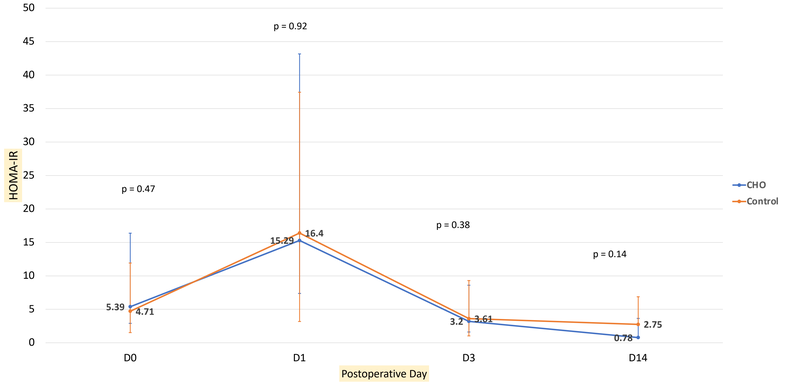
METERIALS AND METHODS

We conducted this study between October 2021 to February 2022. Morbidly obese patients underwent bariatric surgery, either sleeve gastrectomy or Roux-en-Y gastric bypass were randomized to CHO group and control group. The CHO group received 2 doses of oral carbohydrate loading, the night before and 3 hours prior to surgery. In control group, patients received 2 doses of water in the same fashion as the CHO group. Primary outcome was insulin resistance, measured by homeostasis model assessment-estimated insulin resistance (HOMA-IR) index. Secondary outcomes were interleukin-6 (IL-6) and C-reactive protein (CRP) level. We measured HOMA-IR index, IL-6 and CRP level at preoperative, postoperative day 1, 3 and 14.



RESULTS

31 patients were enrolled in this analyzes (16 patients in CHO group, 15 patients in control group). The median HOMA-IR index was 5.39 (2.49 – 10.99) and 4.71 (3.19 – 7.21) (p = 0.47) at preoperative day, 15.29 (7.92 – 27.88) and 16.4 (13.22 – 21.04) (p = 0.92) at postoperative day 1, 3.2 (1.59 – 5.4) and 3.61 (2.58 – 5.69) (p = 0.38) at postoperative day 3, and 0.78 (0 – 2.86) and 2.75 (0 – 4.13) (p = 0.14) at postoperative day 14, in CHO group and control group, respectively.



CONCLUSION

Preoperative oral carbohydrate loading has no difference in insulin resistance and inflammatory outcomes in bariatric surgery patients.