

Abstract – Original Research

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Title of Presentation:

Effect of two nutritional interventions on postprandial glucose response in hospitalised patients with COPD: A randomised cross-over study

1. Brief description/abstract for the content of the poster presentation

Introduction / Objectives: Oral nutrition support is frequently used in treatment of malnutrition in patients with chronic obstructive pulmonary disease (COPD). Considering the use of corticosteroids in patients with COPD, little is known about their effect on the clinically relevant postprandial glucose response and how they might interfere with glucose control. Our aim was to compare the effect of liquid oral nutritional supplements (ONS) and semi solid inbetween meal snacks on postprandial glucose.

Methods: Patients with COPD (n=17) admitted to the Department of Pulmonary Medicine, Iceland and defined as at low or medium nutritional risk (score 0-3) were recruited. In a randomised cross-over design, subjects consumed ONS or a Skyr snack either in a fasting state (study 1) or following breakfast (study 2) and postprandial glucose responses were assessed at regular intervals for two hours (t=15, t=30, t=45, t=60, t=90, t=120 minutes). Wilcoxon Signed-Rank test was used to compare the two interventions.

Results: In study 2, postprandial glucose was significantly higher after consuming ONS than the snack after 60 minutes (9.7±2.4 mmol/L vs. 8.1±3.2 mmol/L, p=0.013 and 120 minutes 9.2±3.2 mmol/L vs. 7.8±2.4 mmol/L, p=0.021, respectively). No difference was found in postprandial glucose concentrations between ONS and the snack when consumed after overnight fasting (study 1).

Conclusions: Lower postprandial glucose concentrations were associated with the snack rather than ONS and being taken after a meal. The clinical relevance of higher postprandial blood glucose after consuming a liquid ONS after breakfast compared with a semi solid snack needs to be studied further.

2. Please give two to three key references (published by you or others) which can be used to inform future work:

Ferreira IM, Brooks D, White J, Goldstein R. Nutritional supplementation for stable chronic obstructive pulmonary disease. *Cochrane Database Syst Rev.* 2012;12:CD000998.

Walters JA, Tan DJ, White CJ, Gibson PG, Wood-Baker R, Walters EH. Systemic corticosteroids for acute exacerbations of chronic obstructive pulmonary disease. *The Cochrane database of systematic reviews.* 2014;9:CD001288.

Islam EA, Limsuwat C, Nantsupawat T, Berdine GG, Nugent KM. The association between glucose levels and hospital outcomes in patients with acute exacerbations of chronic obstructive pulmonary disease. *Annals of thoracic medicine.* 2015;10(2):94-9.

3. Please identify, where possible, up to three specific key messages that participants will take away from your poster presentation to inform their future practice.

To our knowledge no study has assessed the effect of either liquid ONS or semi solid inbetween meal snacks on glucose response in patients with COPD.

In our study, improved postprandial glucose control was seen after the use of the semi solid Skyr snack. The clinical relevance of higher postprandial blood glucose in the liquid ONS group than in the semi solid snack group needs to be studied further.

Recommendations for future studies would be to study postprandial glucose after consumption of various nutritional supplements in malnourished patients with COPD.