Glucagon-like peptide 2 includes adaptation of the remnant intestine following intestinal resection in preterm pigs

Vegge, Andreas; Thymann, Thomas; Bering, Stine Brandt; Jelsing, J.; Stoll, B.; Qvist, N.; Lund, Pernille; Sangild, Per Torp

Published in:
Clinical Nutrition Supplements

Publication date:
2010

Document version
Publisher's PDF, also known as Version of record

Volume 5 Supplement 2 2010

ISSN 1744-1161

Clinical Nutrition Supplements

An International Journal Devoted to Clinical Nutrition and Metabolism

Abstracts of the 32nd ESPEN Congress Nice, France, 5 – 8 September 2010

Official journal of the European Society for Clinical Nutrition and Metabolism

Co ct of bodybuilding on HDL
lev y AAS, GH and INS abuses.
Dec e not due to alterations in
CET abuses further increase cardiovascular risk because of changes in selected enzymes involved in fatty acid metabolism, markers of metabolic alteration and inflammation.

Disclosure of Interest: None declared

PP249

GLUCAGON-LIKE PEPTIDE 2 INDUCES ADAPTATION OF THE REMNANT INTESTINE FOLLOWING INTESTINAL RESECTION IN PRETERM PIGS

A. Vegge[1], T. Thymann[1], S.B. Bering[1], J. Jelsing[2], B. Stoll[3], N. Qvist[4], P. Lund[1], P.B. Jeppesen[5], P.T. Sangild[1]. *[1]Human Nutrition, University of Copenhagen, [2]Gubra ApS, Frederiksberg C, Denmark; [3]Pediatrics, Baylor College of Medicine, Houston, United States; [4]Surgical Department A, Odense University Hospital, Odense, [5]Gastroenterology CA-2121, Rigshospitalet, Copenhagen, Denmark*

Rationale: Short Bowel Syndrome (SBS) may result from intestinal resection of preterm neonates following disorders such as necrotizing enterocolitis (NEC). We hypothesized that exposure to elevated levels of Glucagon-Like Peptide 2 (GLP-2), would improve epithelial adaptation in the immediate post-surgical period of preterm neonates. The preterm pig, a well-established model of NEC, was used as a model for preterm infants.
Methods: Preterm pigs were delivered by caesarean section at 92% gestation and fed colostrum for 2 days before being subjected to 50% resection of the distal small intestine and the establishment of a jejunostomy. Following resection, pigs were put on total parenteral nutrition without (n = 8) or with added GLP-2 (3.5ug/kg BW/hour, n = 9) for four days followed by one day of enteral feeding with colostrum. Animals were euthanized and the small intestine was collected for histology, stereology and *ex vivo* nutrient uptake analyses. Samples from a group of unresected preterm pigs (n = 5) were collected at the same time.
Results: Wet weight of the remaining small intestine was significantly higher in GLP-2 pigs versus control pigs (23.7 vs. 14.1 g/kg BW, $p < 0.01$). This was reflected in a higher volume fraction of epithelium (42.3 vs. 36.5%, $p < 0.01$) with intermediate values in the unresected animals (40.1%). The intestinal epithelial volume was significantly higher in both the GLP-2 group and the unresected controls, compared to the control SBS group ($p < 0.05$). The GLP-2 treatment induced marked increases in brush border enzyme activities ($p < 0.01$) whereas no effect on *ex vivo* absorptive capacity of glucose and leucine per gram intestinal tissue was observed.
Conclusion: GLP-2 was found to induce a rapid and marked increase of the remnant intestine in resected preterm pigs. Post-surgical GLP-2 treatment may be an effective therapy to enhance intestinal adaptation in preterm infants with SBS.

Disclosure of Interest: None declared

Geriatrics II

PP250

THE INFLUENCE OF SIP FEEDING ON SPONTANEOUS FOOD INTAKE IN ACUTELY ILL GERIATRIC PATIENTS

Z. Dedkova[1], P. Andelova[1], L. Sobotka[1]. *[1]Department of Gerontology and Metabolism, University Hospital Hradec Kralove, Hradec Kralove, Czech Republic*

Rationale: Aims of our study wereto assess whether a spontaneous food intake is affected by the sip feeding, to what degree the motivated sip feeding is tolerated and whether the in-hospital cumulative deficit of energy and proteins is affected by the sip feeding in geriatric patients. The study is follow up to that one presented in last year.
Methods: Patients acutely admitted to our geriatric unit (153 patients – 67 m, 86 f, age 77–96 years) were randomly divided into 2 groups. Study group received the sip feed (300 kcal, 12 g proteins) twice a day together with a physiotherapy from the 2nd in-hospital day. Control group received a standard diet;the nutritional support and physiotherapy was given according to a general rules. The spontaneous food intake was recorded using a quarter plate method in both groups. The quantity of ingested sip feed was recorded daily. Results were expressed as the mean±SD. D'Agostino test was used for normality, Student and Wilcoxon test were used for significance.
Results: The motivated sip feeding was well tolerated, the quantity of ingested sip feed was 81±24%. This did not affect the spontaneous food intake, there were none significant differences in all main day courses. The cumulative deficit of energy and proteins was significantly reduced by the sip feeding (study g: 1770±5840 kcal, 175±275 g proteins; control g: 7620±8580 kcal, 422±397 g proteins; p 0.001).
Conclusion: The motivated sip feeding (explanation of the purpose in feeding) is well tolerated in acutely ill geriatric patients.This does not affect the spontaneous food intake. It increases the in-hospital energy and protein intake.

Disclosure of Interest: Z. Dedkova Grant/Research Support from: VZ MSM 0021620820, P. Andelova Grant/Research Support from: VZ MSM 0021620820, L. Sobotka Grant/Research Support from: VZ MSM 0021620820

PP251

SELF-SUFFICIENCY AND ANTHROPOMETRIC MEASUREMENT IN RELATION TO NUTRITION SUPPORT AND PHYSIOTHERAPY IN GERIATRIC PATIENTS

P. Andelova[1], Z. Dedkova[1], L. Sobotka[1]. *[1]Department of Gerontology and Metabolism, University Hospital Hradec Kralove, Hradec Kralove, Czech Republic*

Rationale: Elderly patients in acute illness are at risk of undernutrition, self-sufficiency and muscle mass loss. The study was focussed on assessing effects of an early nutrition support and physiotherapy on seniors measured by self-sufficiency and antropometry. This study follows up our previous results.
Methods: In the prospective follow-up randomised design 67 patients (mean age 83.3±3.82 y) acutely admitted to geriatric unit were studied. We observed self-sufficiency