

# Postprandial responses of circulating pancreatic polypeptide (PP) and incretin levels in hemodialysis patients following a standardized meal

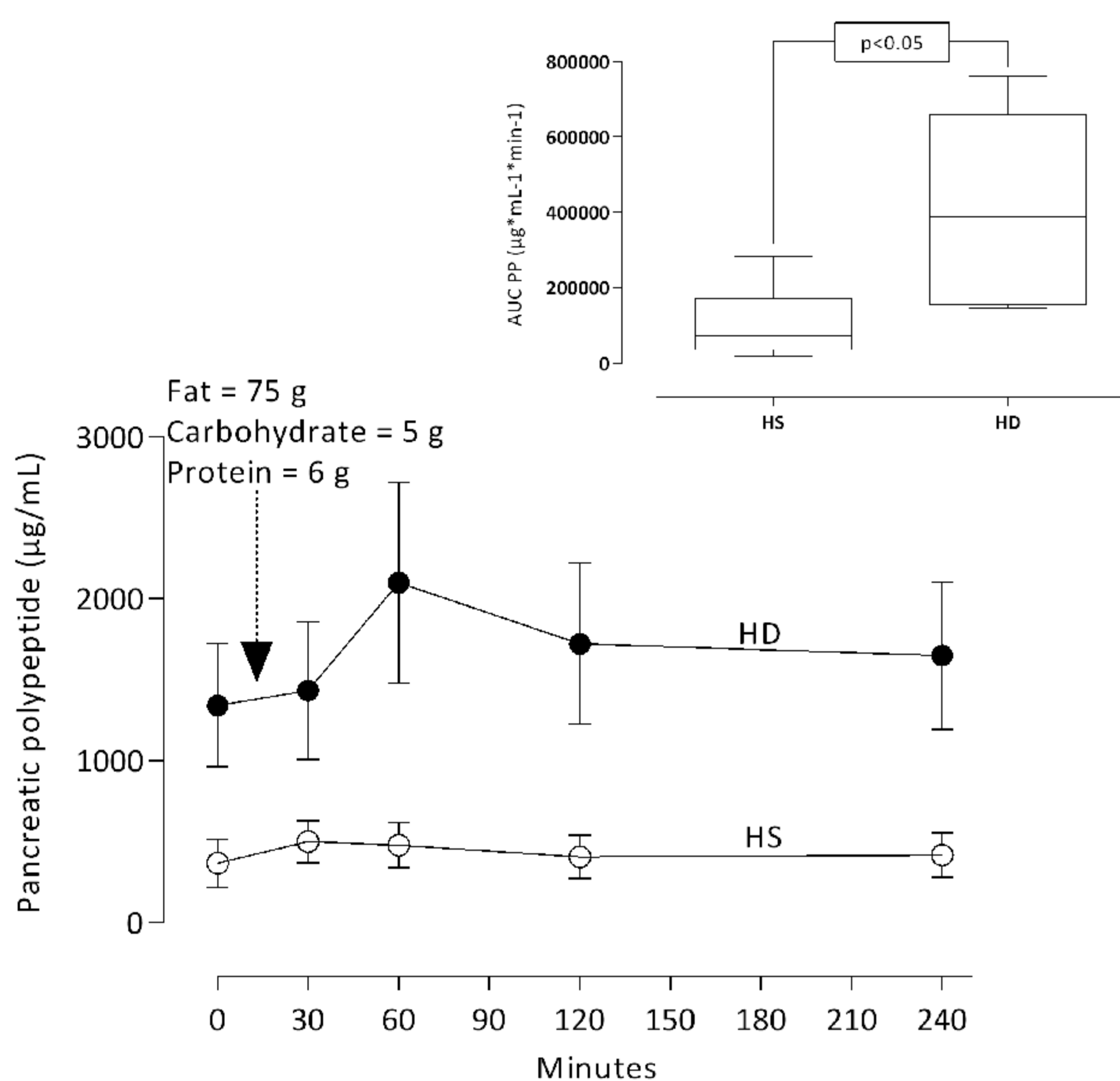
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## Aim

In an intervention study, we analyzed the impact of a fat and carbohydrate -rich meal on PP and duodenal incretin responses in HD patients.

**Figure 1.** Area under the curve (AUC) of plasma pancreatic polypeptide (PP) concentrations in HS and HD patients.



## Methods

Six HD patients (17% females; age of 52(40-62) years; body mass index (BMI) 22(19-24)  $\text{kg}/\text{m}^2$ ) and 9 healthy subjects (HS) (55% females; age of 48(43-52) years; BMI 26(24-30)  $\text{kg}/\text{m}^2$ ) (Table 1) received a test meal consisting of 75 g of milk fat, 80 g of carbohydrates and 6 g of proteins. Fasting and postprandial levels of PP, glucose-dependent insulinotropic polypeptide (GIP), glucagon-like peptide 1 (GLP-1) as well as glucose and triglycerides were measured. Postprandial responses over 240 min were evaluated using area under the curve (AUC) values for the studied peptide (Figure 1).

## Conclusions

The fasting PP and GIP levels, and the postprandial PP response, were markedly higher in HD patients compared to HS whereas postprandial responses of glucose, triglycerides, GIP and GLP-1 were similar in patients and HS. We speculate that an elevated PP response may be involved in the commonly observed prolonged feeling of fullness and poor appetite of this patient population.

## Introduction

Satiety and poor appetite are common in hemodialysis (HD) patients by mechanisms not yet fully elucidated. Plasma pancreatic polypeptide (PP) may be reduced in conditions associated with increased food intake and elevated in anorexia nervosa.

**Table 1.** Baseline characteristics of HD patients and healthy subjects that completed the study assessments.

	Hemodialysis patients (n=6)	Healthy subjects (n=9)	P value
Sex (% females)	17	55	0.11
Age (years)	52 (40-62)	48 (43-52)	0.72
BMI ( $\text{kg}/\text{m}^2$ )	22 (19-24)	26 (24-30)	0.03
SBP (mmHg)	158 (134-196)	128 (123-146)	0.08
DBP (mmHg)	80 (69-115)	84 (76-89)	0.89
Glucose (mmol/L)	4.8 (4.3-5.4)	5.0 (4.3-5.4)	0.83
PP ( $\mu\text{g}/\text{mL}$ )	1154 (554-1969)	180 (61-691)	0.01
GIP (pmol/L)	22.1 (13.3-23.3)	7.1 (5.3-10.6)	0.01
GLP-1 (pmol/L)	4.9 (2.4-15.6)	3.5 (2.7-5.4)	0.64
Insulin, (mIU/ml)	22.2 (9.6-35.2)	4.7 (3.7-11.9)	0.01



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