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Dyspepsia: an underestimated problem among end-stage renal disease patients

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Highly prevalent

Great impact on quality of life

Prevalence

In the literature:

***between* 50% *and* 70%**

VanVlem et al Am J Kidney Dis 2000; 36:962

Cano et al Am J Gastroenterol 2007 102:1990

Impact on Quality of Life

Santos et al. Brazilian Congress of Nephrology 2012

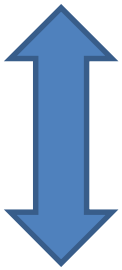
What is dyspepsia?

- Constellation of symptoms
  - Upper abdominal pain; Nausea; Vomiting; Upper abdominal bloating; Early satiety

- Tack et al. Gastroenterology 2006; 130:1466

WHY?

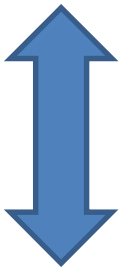
I. Gastric emptying delay



II. Hypervolemia

WHY?

I. **Gastric emptying delay**



II. Hypervolemia

Salles Junior *et al. BMC Nephrology* 2013, **14**:275
http://www.biomedcentral.com/1471-2369/14/275

BMC Nephrology

RESEARCH ARTICLE Open Access

Dyspepsia and gastric emptying in end-stage renal disease patients on hemodialysis

Luiz Derwal Salles Junior[1], Paulo Roberto Santos[1*], Armênio Aguiar dos Santos[2] and Marcellus Henrique Loiola Ponte de Souza[2]

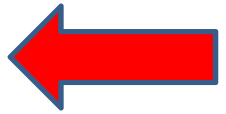
Digestive Diseases and Sciences, Vol. 49, Nos. 11/12 (November/December 2004), pp. 1822–1829 (© 2004)

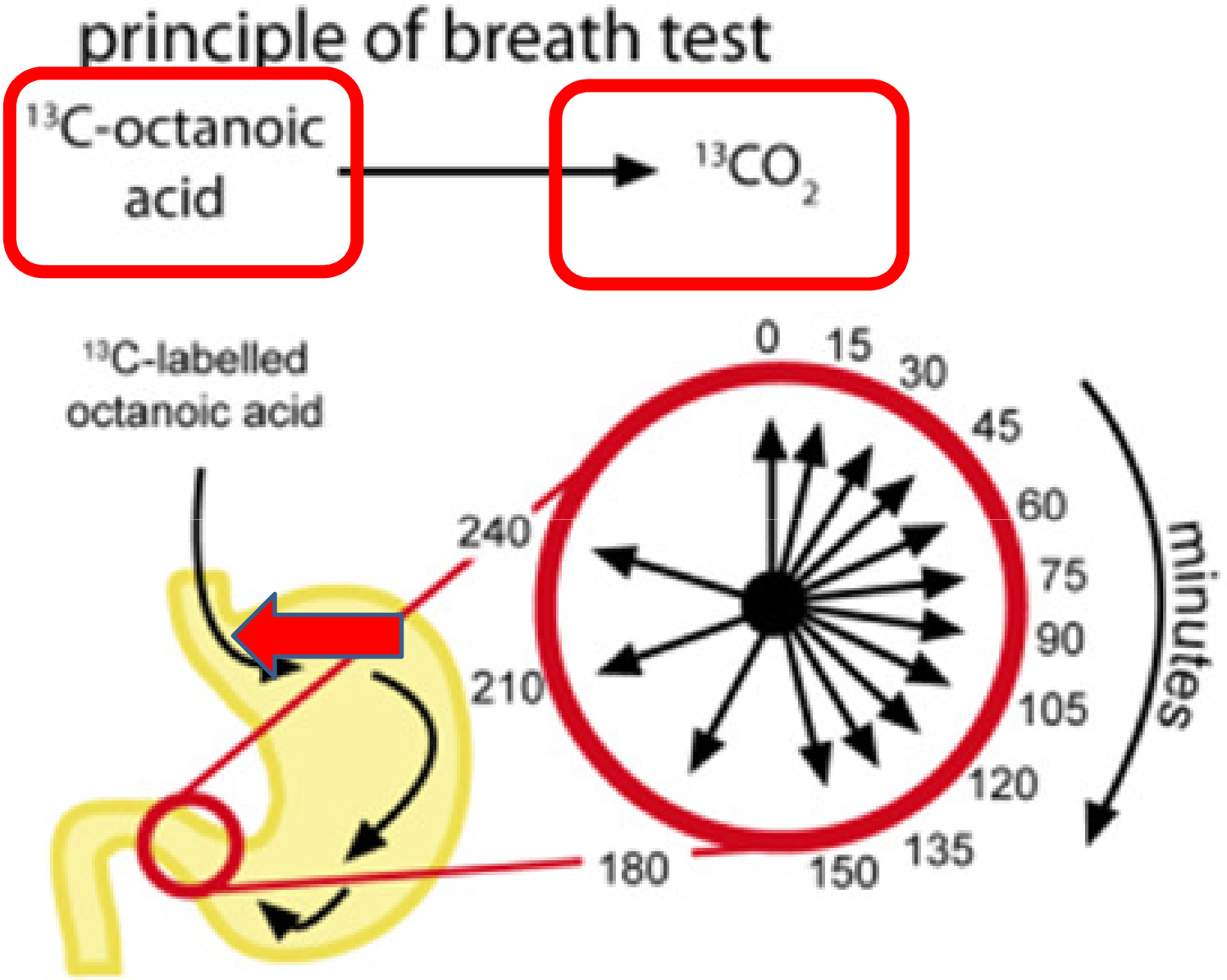
Development and Validation of a Cross-Cultural Questionnaire to Evaluate Nonulcer Dyspepsia: The Porto Alegre Dyspeptic Symptoms Questionnaire (PADYQ)

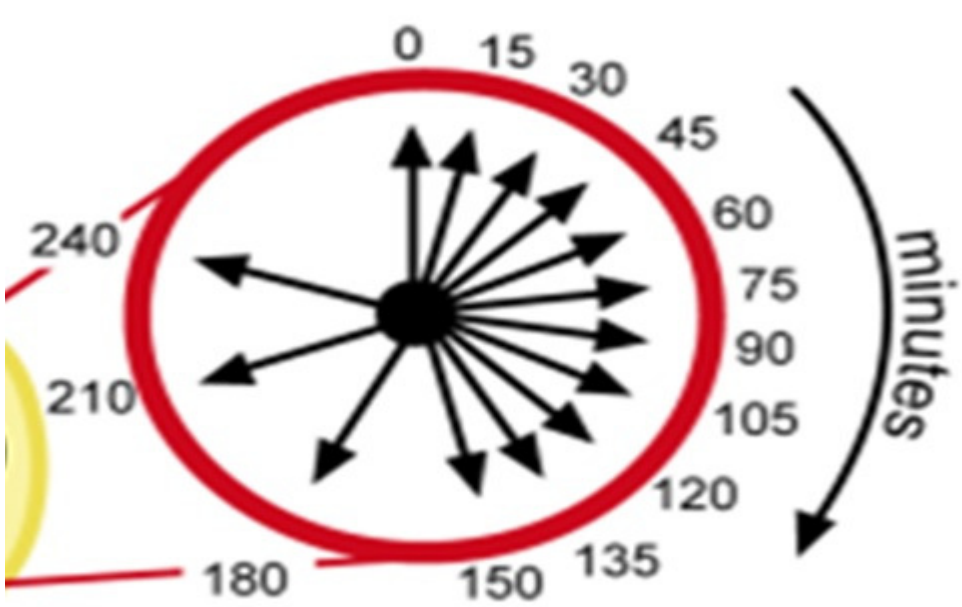
GUILHERME BECKER SANDER, MD, LUIZ EDMUNDO MAZZOLENI, MD, ScD, CARLOS FERNANDO MAGALHÃES FRANCESCONI, MD, ScD, ANDRÉ CASTAGNA WORTMANN, MD, EDUARDO ANDRÉ OTT, MD, ALEXANDRO THEIL, MD, VICENZO DA CRUZ PICCOLI, ÂNGELA CRISTIANE DA SILVA, MD, LEANDRO OLIVEIRA, MD, SIMONE BEHEREGARAY, MD, SIMONE MATIOTI, MD, GUSTAVO SOMM, MD, and JOSÉ ROBERTO GOLDIM, PhD

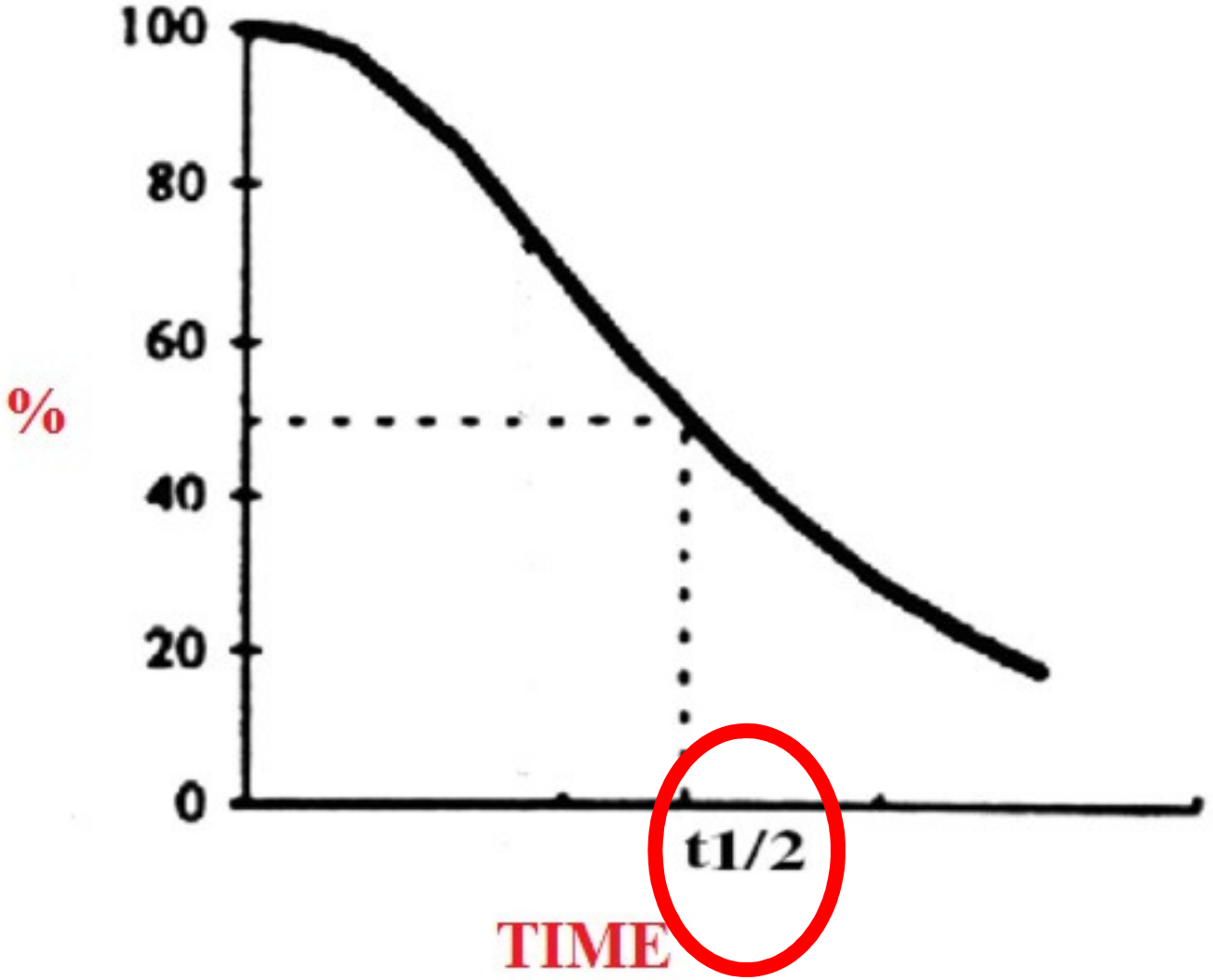
TABLE 1. CHARACTERISTIC SYMPTOMS OF NONULCER DYSPEPSIA ASSESSED BY THE PORTO ALEGRE DYSPEPTIC SYMPTOMS QUESTIONNAIRE

Symptom	*Score*
Pain in upper abdomen	
Intensity	0–5
Duration	0–3
Frequency	0–4
Nausea	
Intensity	0–5
Duration	0–3
Frequency	0–4
Vomiting	
Frequency	0–4
Upper abdominal bloating	
Intensity	0–5
Duration	0–3
Frequency	0–4
Early satiety	
Frequency	4
Total	44




principle of breath test
^{13}C-octanoic acid
$^{13}CO_2$
^{13}C-labelled octanoic acid
0
15
30
45
60
75
90
105
120
135
150
180
210
240
minutes


0
15
30
45
60
75
90
105
120
135
150
180
210
240
minutes


100
80
60
%
40
20
0
t1/2
TIME

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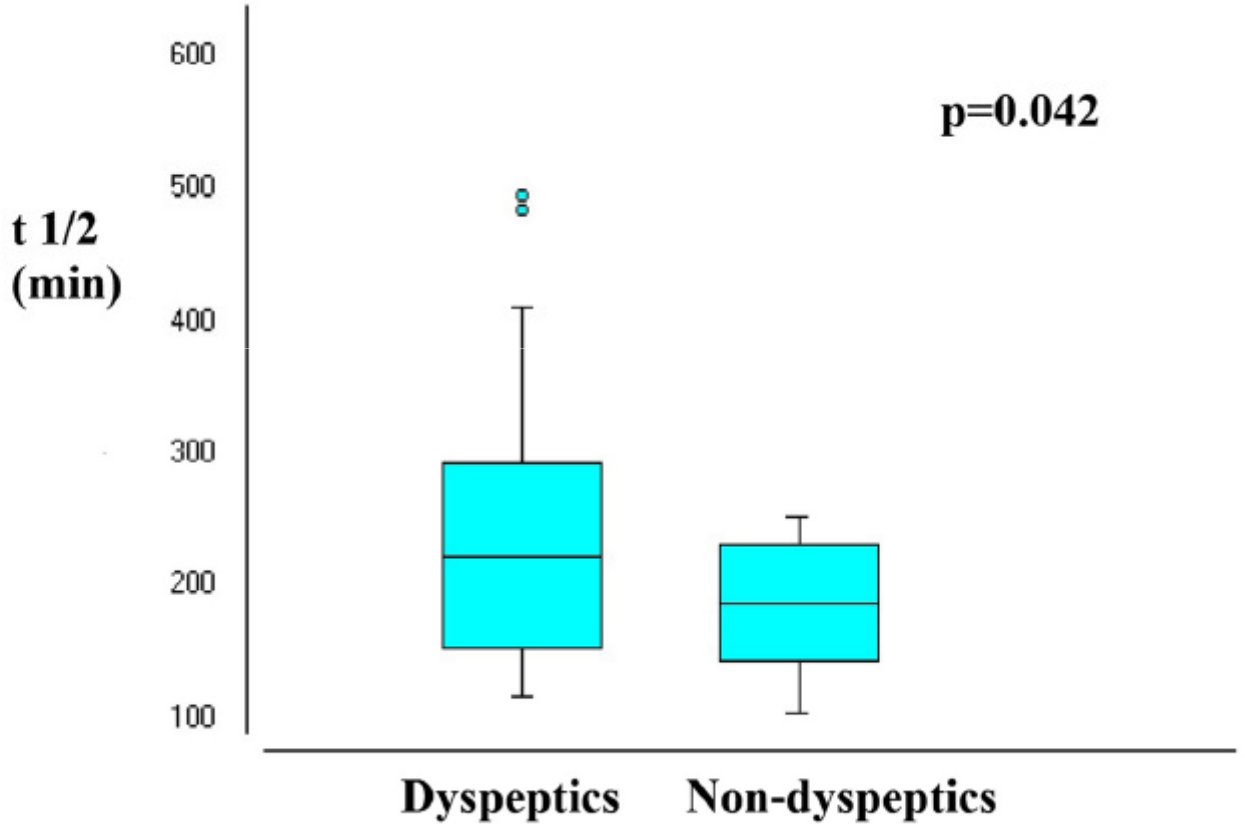

Figure 1 Comparison of t1/2 between dyspeptics and non-dyspeptics.

Dyspepsia and gastric emptying in end-stage renal disease patients on hemodialysis

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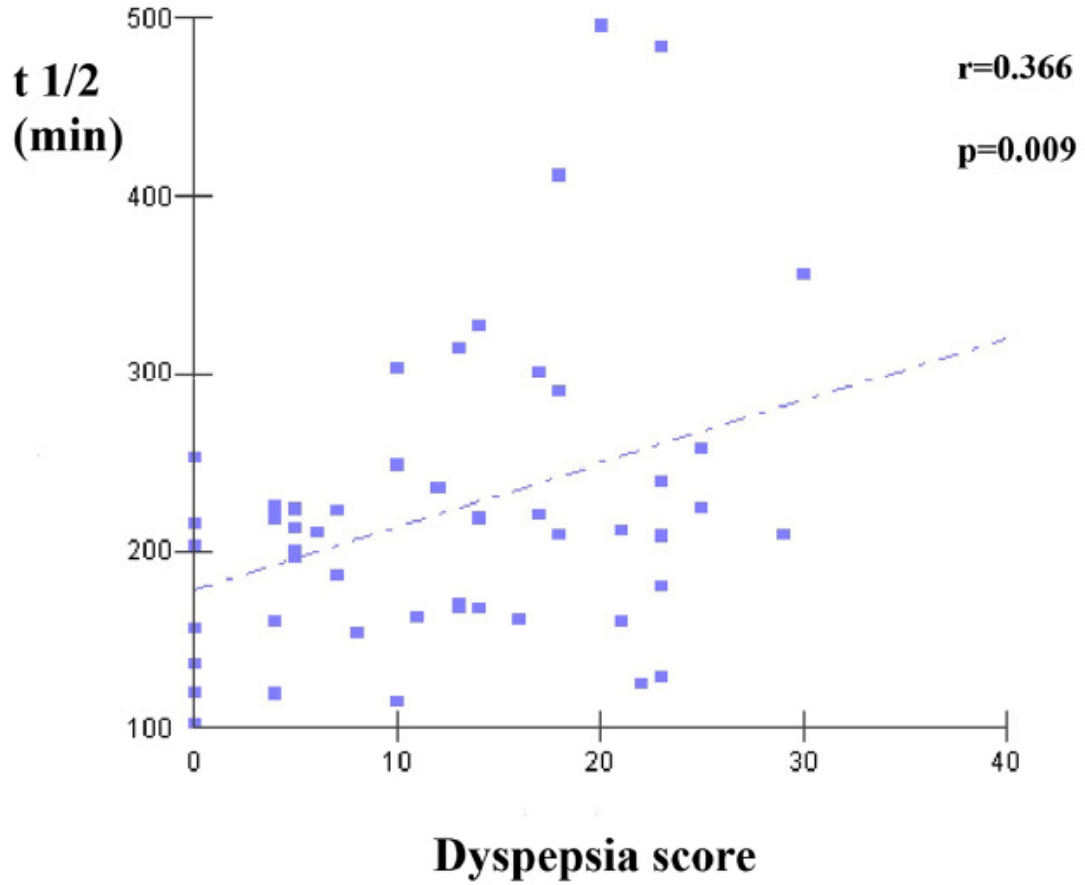


Figure 2 Correlation between t1/2 and dyspepsia scores.

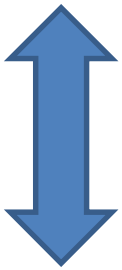
Clinical implications

I. It is very easy to search for symptoms of dyspepsia, so it should be done often

II. Our finding raises the question about the main role of prokinetics in dyspepsia cases

WHY?

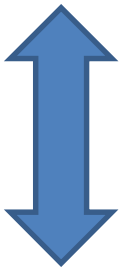
I. **Gastric emptying delay**



II. Hypervolemia

WHY?

I. Gastric emptying delay



II. Hypervolemia

Volemic status

Table 2 – Distribution of patients with and without dyspepsia according to hypervolemia

	Volemic status		P
	Without hypervolemia (RFO < 15%)	Hypervolemia (RFO ≥ 15%)	
Non-dyspeptics	75 (82.4)	16 (17.6)	<0.001
Dyspeptics	22 (34.4)	42 (65.6)	

Percentages in parentheses

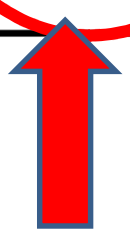


Table 4 – Multivariate logistic regression for the presence of dyspepsia

	B	P	OR	95% CI
Volemia	0.696	<0.001	2.00	1.55-2.50
Comorbidity	0.525	0.077	1.69	0.94-3.03
Vascular access	-0.362	0.516	0.69	0.23-2.08

Clinical implications

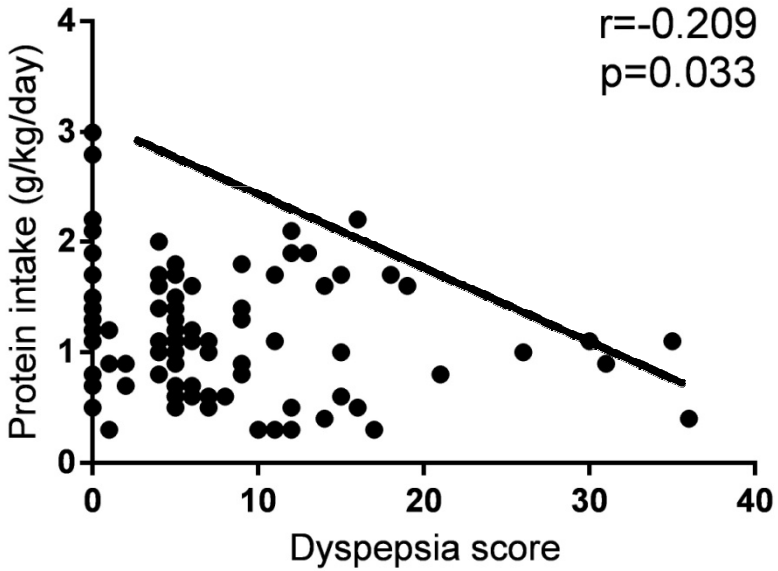
I. Functional dyspepsia could be an alert of the need to revise the prescribed dry-weight of patients on HD

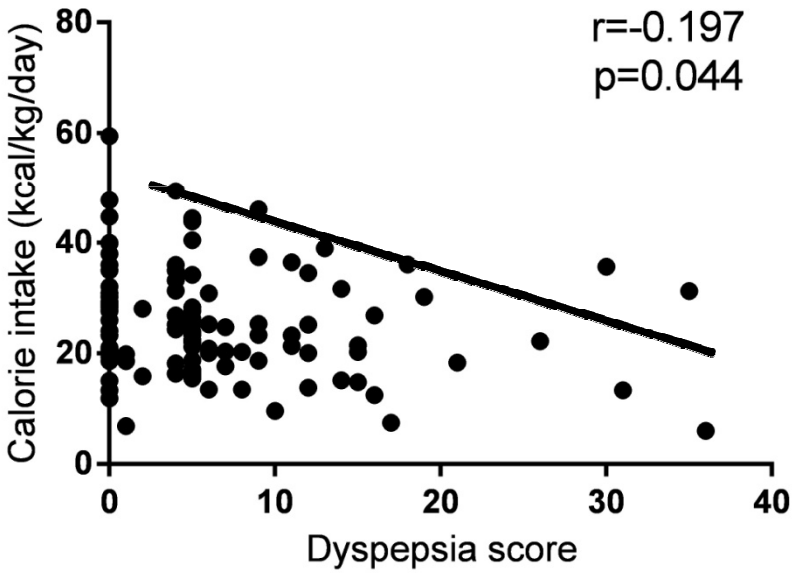
II. Dyspeptic symptoms could be another tool to help estimate the optimal dry weight of patients on HD

IMPACTS ON NUTRITIONAL STATUS?

Table 2 – Comparison of nutritional variables between patients with and without dyspepsia

	Without dyspepsia	With dyspepsia	P
Body mass index	24.3 ± 4.0	24.3 ± 4.1	0.930
Mid-arm circumference[a]	89.4 ± 12.9	83.1 ± 15.7	0.027
Mid-arm muscular circumference[a]	131.1 ± 82.0	113.2 ±76.8	0.289
Triceps skinfold[a]	87.2 ± 38.0	81.0 ± 45.2	0.454
Protein intake (g/kg/day)	1.3 ± 0.5	1.0 ± 0.5	0.019
Caloric ingest (kcal/kg/day)	27.4 ± 10.0	23.0 ± 9.2	0.026
Albumin (g/dl)	4.0 ± 0.4	4.2 0.4	0.095
Cholesterol (mg/dl)	128.0 ± 42.1	128.9 ± 45.5	0.9163


r=-0.209
p=0.033
Protein intake (g/kg/day)
0
1
2
3
4
0
10
20
30
40
Dyspepsia score


r=-0.197
p=0.044
Calorie intake (kcal/kg/day)
0
20
40
60
80
0
10
20
30
40
Dyspepsia score

Clinical implication

I. Screening of dyspeptic symptoms can be used as a tool for identification of patients on HD who are at risk of malnutrition


CENESE

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