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Diagnostic accuracy of ESPEN Diagnostic Criteria for malnutrition in selected clinical populations

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Aim

We aimed to assess diagnostic accuracy of ESPEN's Diagnostic Criteria for malnutrition (EDC), as compared to the Patient-Generated Subjective Global Assessment (PG-SGA) in selected clinical populations.

Conclusion

In COPD, rectum-/colon cancer, and orthopedic patients, diagnostic accuracy of EDC as compared to the PG-SGA is low, especially sensitivity and negative predictive value. Consequently, using EDC in these populations is likely to result in underrecognition of malnutrition, which may hinder timely and adequate treatment of malnutrition.

Background

The European Society for Clinical Nutrition and Metabolism published criteria for diagnosis of malnutrition, i.e. the ESPEN Diagnostic Criteria (EDC).[1] The Patient-Generated Subjective Global Assessment (PG-SGA©) is worldwide considered as a reference method to assess malnutrition and its risk factors for malnutrition.[2]
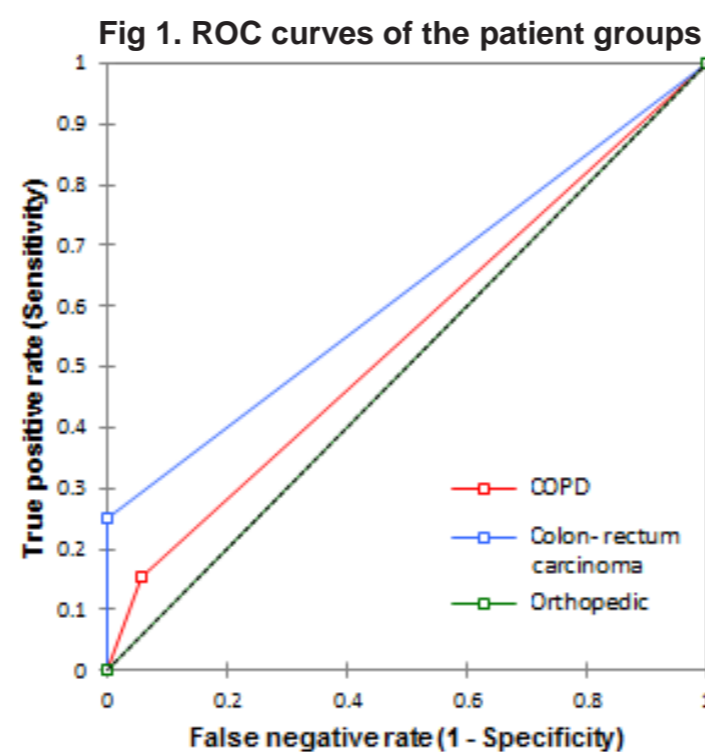

Fig 1. ROC curves of the patient groups

Results

According to EDC and PG-SGA, 6.9% and 31% were malnourished, respectively. For COPD, colon/rectum cancer, and orthopedic patients, prevalence of malnutrition according EDC and PG-SGA was 9.5% and 39.7%, 4.8% and 19%, and 0% and 10.8% respectively. Overall sensitivity, specificity, positive and negative predictive value were 0.15, 0.97, 0.85 and 0.03, respectively.

The area under the ROC curve (AUC) was 0.56 (p=0.23) for the total population. For COPD, colon/rectum cancer, and orthopedic patients, AUC was 0.55 (p=0.39), 0.63 (p=0.45), and 0.50 (p=1.00), respectively (Fig 1).

Methods

In two hospitals, in 174 patients, malnutrition was assessed by EDC and PG-SGA. According to EDC, malnutrition was defined as having at least one of the following criteria:
- BMI <18.5 kg/m2
- Combination of unintentional weight loss (>10% of habitual weight indefinite of time, or >5% over 3 months) and low BMI (<20 or <22 kg/m2 in subjects younger and older than 70 yrs, respectively) and/or a low fat-free mass index (FFMI) (<15 [female] and <17 kg/m2 [male]).

As reference, malnutrition was defined as PG-SGA Stage B (moderately/suspected malnutrition) or Stage C (severely malnourished).

Diagnostic accuracy was assessed by sensitivity, specificity, positive and negative predictive value, and the receiver operating characteristic (ROC) curve.

References

1. Cederholm T, et al. Diagnostic criteria for malnutrition - An ESPEN consensus statement. Clin Nutr 2015;34:335e40.
2. Jager-Wittenaar, et al. Assessing nutritional status in cancer: role of the Patient-Generated Subjective Global Assessment. Curr Opin Clin Nutr Metab Care. 2017.

Table 1. Prevalence (%) of malnutrition according to EDC and PG-SGA

	EDC		PG-SGA	
	Well nourished	Malnourished	Well nourished	Malnourished
Total population	93.1%	6.9%	69%	31%
COPD	91%	9.5%	60.3%	39.7%
Colon-rectum cancer	95.2%	4.8%	81%	19%
Orthopedic	100%	0%	89.2%	10.8%

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