



## Short communication

## Use of the nutritional risk score by surgeons and nutritionists



Michael Benoit <sup>a</sup>, Fabian Grass <sup>a</sup>, Nicolas Demartines <sup>a, \*</sup>, Pauline Coti-Bertrand <sup>b</sup>,  
Markus Schäfer <sup>a</sup>, Martin Hübner <sup>a</sup>

<sup>a</sup> Department of Visceral Surgery, University Hospital CHUV, Lausanne, Switzerland

<sup>b</sup> Department of Endocrinology, Diabetology and Metabolism, Unit of Clinical Nutrition, University Hospital CHUV, Lausanne, Switzerland

## ARTICLE INFO

## Article history:

Received 10 August 2014

Accepted 21 January 2015

## Keywords:

Nutritional screening  
Nutritional risk score  
Perioperative nutrition  
Reliability

## SUMMARY

**Background:** The Nutritional Risk Score (NRS) is a validated tool to identify patients who should benefit of nutritional interventions. Nutritional screening however has not yet been widely adopted by surgeons. Furthermore, the question about reliability of nutritional assessment performed by surgeons is still unanswered.

**Methods:** Data was obtained from a recent randomised trial including 146 patients with an NRS  $\geq 3$  as assessed by the surgeons. Additional detailed nutritional assessment was performed for all patients by nutritional specialists and entered prospectively in a dedicated database. In this retrospective, surgeons' scoring of NRS and its components was compared to the assessment by nutritionists (considered as gold standard).

**Results:** Prospective NRS scores by surgeons and nutritionists were available for 141 patients (97%). Surgeons calculated a NRS of 7, 6, 5, 4 and 3 in 2, 8, 38, 21 and 72 patients respectively. Nutritionists calculated a NRS of 6, 5, 4, 3 and 2 in 8, 26, 47, 57, 3 patients, respectively. Surgeons' assessment was entirely correct in 56 patients (40%), while at least the final score was consistent in 63 patients (45%). Surgeons overrated the NRS in 21% of patients and underestimated the score in 29%. Evaluation of the nutritional status showed most of the discrepancies (54%).

**Conclusion:** Surgeon's assessment of nutritional status is modest at best. Close collaboration with nutritional specialists should be recommended in order to avoid misdiagnosis and under-treatment of patients at nutritional risk.

© 2015 Elsevier Ltd and European Society for Clinical Nutrition and Metabolism. All rights reserved.

## 1. Introduction

Despite the fact that malnutrition is nowadays accepted as an important risk factor that impacts on postoperative morbidity and infectious complications in particular; accurate assessment is still a matter of debate [1–4]. Nevertheless there is solid evidence in the literature that perioperative nutritional interventions are highly effective and guidelines provided by American and European Nutritional Societies are available for a standardised assessment and tailoring nutritional interventions [5–8].

Aiming to identify patients at risk, the Nutritional Risk Score (NRS) has been developed as a prospectively validated screening

tool in Europe [9]. Based on few items which are easy to obtain, a reliable identification of malnourished patients should be possible, independently whether users are specialists in clinical nutrition or not.

In general, preoperative nutritional assessment of surgical patients is performed either by surgeons, nurses, or by nutrition specialists [4]. However, there is little information available, whether the application of the NRS is really easy and reproducible in daily clinical practice, and how important the inter-observer variability is between surgeons and nutrition specialists.

The aim of the current study was to evaluate eventual differences in NRS scoring performed by surgeons or nutrition specialists prior to major abdominal surgery.

## 2. Methods

This is a retrospective analysis of a prospective database from a recently published trial (NCT00512213) [10]. In a double-blinded

Abbreviations: NRS, nutritional risk score.

\* Corresponding author. Department of Visceral Surgery, CHUV – Centre Hospitalier Universitaire Vaudois, Rue du Bugnon 46, 1011 Lausanne, Switzerland. Tel.: +41 21 314 24 00; fax: +41 21 314 2411.

E-mail address: [demartines@chuv.ch](mailto:demartines@chuv.ch) (N. Demartines).

randomised trial, 146 patients undergoing major abdominal surgery were randomised to receive either immunonutrition® or an isocaloric-isonitrogenous oral solution during the last five days prior to surgery. Only patients at nutritional risk as defined by a NRS score  $\geq 3$  were eligible for this study.

Initial nutritional screening was performed by the surgical team (staff surgeons and residents) in the outpatients' clinic using the NRS-score. All eligible patients were informed about the study and included in the protocol once their written consent was obtained. All study participants were then assessed by the nutritional team (nutrition specialists and nurses) who realised a broad nutritional assessment including NRS. This was a unique opportunity to scrutinize a well-documented cohort of consecutive patients with prospectively performed NRS scoring by surgeons and by nutritionists.

The NRS is a multimodal screening tool in which disease severity, nutritional status and age are combined [9]. Nutritional status is evaluated by three variables: Body Mass Index (BMI), recent weight loss and food intake during the last week before evaluation. Severity of disease, used as an indicator of metabolic stress and increased nutritional requirements, is graded on a scale from 1 to 3 [9]. One point is added for patients aged >70 years. A NRS-score of >3 is considered as at risk [9]. The surgical team had repetitive educational sessions where the NRS was explained in detail; practical exercises were performed to reinforce the message.

For the purpose of this study, we defined the nutritionists' assessment as gold standard and as reference for the surgeons' evaluation. Descriptive statistics were prepared and presented using Numbers 3.2 (Apple Inc., 1 Infinite Loop, Cupertino, CA 95014 USA). Categorical variables were tested for statistical significance ( $P < 0.05$ ) applying Chi square test by use of Prism 5.2 (GraphPad® Software Inc., 2236 Avenida de la Playa, La Jolla, CA 92037 USA). Inter-rater agreement test (kappa test) was used to assess agreement between examiners. We used linear weights since the difference between the first and second category has the same importance as a difference between the second and third category (MedCalc Software, Version 12.4.0; B-8400 Ostend, Belgium).

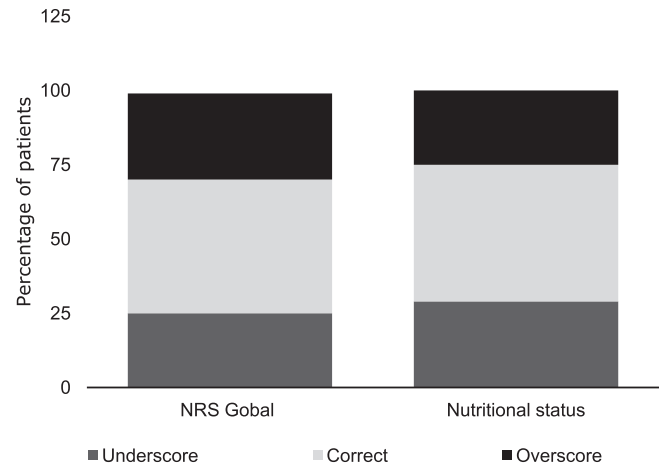
### 3. Results

Prospective NRS scores were assessed independently by surgeons and nutritionists for 141 out of 146 patients (97%). The global scoring of the NRS by surgeons and nutritionists is displayed in Table 1. Surgeons calculated a NRS of 7, 6, 5, 4 and 3 in 2, 8, 38, 21 and 72 patients respectively. Nutritionists calculated a NRS of 6, 5, 4, 3 and 2 in 8, 26, 47, 57, 3 patients, respectively. The surgeons' estimates arrived at the same final score in 63 patients (45%), but were entirely consistent with nutritional assessment in 56 patients (40%) only ( $P = 0.002$ ). Surgeons overestimated the NRS final score

**Table 1**  
Nutritional assessment by surgeons versus nutritionists.

NRS score	Surgeon	Nutritionist
2	0 (0%)	3 (2%)
3	72 (51%)	57 (40%)
4	21 (14%)	47 (33%)
5	38 (27%)	26 (18%)
6	8 (6%)	8 (5%)
7	2 (1%)	0 (0%)

Overall NRS scores attributed by surgeons and nutritionist for the same cohort of 141 patients.  
NRS – Nutritional Risk Score.



**Fig. 1.** Scoring quality of surgeons compared to nutritionists. NRS scoring performed by the surgical team was compared with the assessment done by the nutritional specialists. The number of congruent ratings is displayed in grey, whereas higher and lower attributed scores as visualized in black and white, respectively, for NRS overall on the left and its component nutritional status on the right side. NRS – Nutritional Risk Score.

in 21% of patients and underscoring in 29% (Fig. 1). A detailed overview of discrepancies between surgical and nutritional assessment is provided in Table 2.

The main difference in nutritional screening performed by surgeons and nutritionists regarded the nutritional criteria of the NRS with incongruent assessment in 77 patients representing 55% of the cohort ( $P < 0.001$ ). Of these, 42 patients (29%) were attributed a lower scoring for their nutritional status by surgeons, while 35 patients (26%) were overscored by the surgeons' assessment as compared with the evaluation by the nutritional team (Fig. 1).

There were also differences noted between surgeons and nutritionists in assessing disease severity. Discrepant scoring occurred in overall 17 patients (12%); in 16 patients surgeons attributed a higher score than nutritionists, while the opposite was observed in one patient only ( $P = 0.005$ ). Unfortunately, one surgeon forgot by mistake to add an extra-point for old age, while the respective patients was exactly 70 years.

A weighted Kappa value was calculated to evaluate inter-rater agreement (see Table 3). We calculated a value of 0.303 (95% CI: 0.184–0.423), which interpreted with Altman's index is evaluated as fair.

**Table 2**  
Assessment of the components of NRS by surgeons and nutritionists.

NRS	Score	Nutritionist N = 141	Surgeon N = 141
Nutritional status	0	40	44
	1	40	38
	2	42	38
	3	19	21
Disease severity	0	2	0
	1	3	0
	2	135	130
Age >70	0	1	11
	1	62	62
		79	79

The components of the NRS as documented by surgeons and nutritionist for the same cohort of 141 patients.  
NRS – Nutritional Risk Score.

Download English Version:

<https://daneshyari.com/en/article/5871357>

Download Persian Version:

<https://daneshyari.com/article/5871357>

[Daneshyari.com](https://daneshyari.com)