Does the Patient-Generated Subjective Global Assessment Short Form (PG-SGA-SF) food intake domain reliably identify inadequate protein and energy intake at the beginning of systemic anti-cancer treatment?

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Background

Malnutrition screening is recommended in oncology due to the high prevalence of malnutrition and associated adverse outcomes[1]. The Patient-Generated Subjective Global Assessment Short Form (PG-SGA-SF) is a validated screening tool in the oncology setting[2,3], but the food intake domain has not previously been compared with quantitative dietary assessment.

Aim

To explore nutritional adequacy in relation to PG-SGA-SF food intake domain and overall nutritional risk at start of systemic anti-cancer treatment (SACT).

Methods

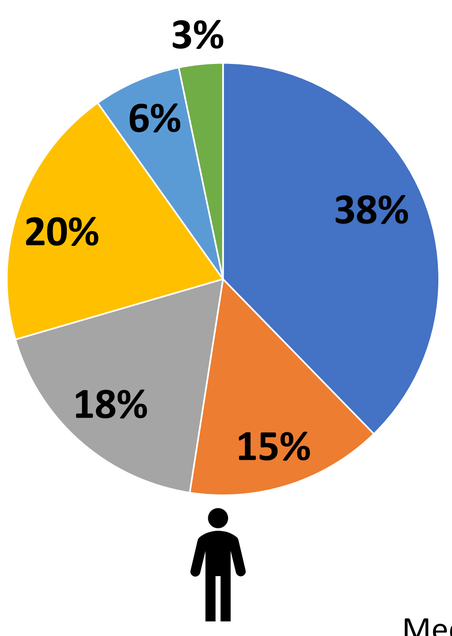
SARCONC-2 is an ongoing (target n = 330) prospective observational study exploring determinants of nutritional status in ambulatory oncology settings in Cork, Ireland. Participant surveys, chart reviews and dietitian-administered 24-hour dietary recalls were completed on day 1 of a new SACT line and repeated at 2 timepoints, 6-8 weeks and 12 weeks aligning with day 1 of treatment cycle.

For this analysis individuals who reported fasting for a medical procedure (n=4), receiving nutrition through feeding tube (n=3), or did not complete 24-hour recall (n=2) were excluded.

Descriptive statistics described nutritional intakes according to PG-SGA-SF scores, with categories for risk of malnutrition; low (score 0-3), medium (score 4-8) and high (score ≥9). Chi-square and Fisher's exact test assessed associations between protein/energy adequacy as per ESPEN recommendations (1-1.5g/kg/day and 25-30kcal/kg/day) and PG-SGA-SF intake domain ("As compared to my normal intake, I would rate my food intake during the past month as: less than usual/ unchanged/ more than usual").

Results

Participant Characteristics (n=61)



66% Male

Cancer Site

- Colorectal
- Genitourinary
- Oesophageal/gastric
- HPB
- Lung
- Other

Median age 69 years (IQR 61-74years)

38% (n=23) had PG-SGA-SF Score ≥4 (medium-high risk malnutrition)

10% BMI <20kg/m^2
62% BMI ≥25kg/m^2

67% receiving 1st line treatment

46% curative treatment intent

16% reported ONS consumption in 24-hour recall

54% had metastatic disease

- PG-SGA-SF score identified **62%** (n=38), **20%** (n=12) and **18%** (n=11) of participants, as **low, medium** or **high** malnutrition risk, respectively.
- **57%** (n=35) consumed **<25 kcal/kg** from diet and ONS (where consumed) while **72%** (n=44) consumed **<30kcal/kg** as per their 24-hour recall.
- **43%** (n=26) consumed **<1 g protein per kg body weight** from diet and ONS (where consumed), and **77%** (n=47) consumed **<1.5g protein/kg.**
- Three-quarters of participants classified as **medium malnutrition risk** reported inadequate energy **(75%, n=9)** or inadequate protein **(75%, n=9)** intakes (Figure 1).
- Over half of participants **(55%, n=6)** identified as **high risk** reported energy intake <25kcal/kg or protein intake <1g/kg (Figure 1).
- Of the participants reporting food intake as **"unchanged", 59% consumed <25kcal/kg** as per their 24-hour recall & **37% consumed <1g protein/kg** (Table 1).
- There was no significant association found between PG-SGA-SF food intake rating and energy or protein adequacy according to ESPEN recommendations at beginning of SACT.

Figure 1. Achievement of ESPEN Recommendations (energy figure 1A and protein figure 1B), calculated from 24-hour recalls, across PG-SGA-SF Malnutrition Risk Categories.

Figure 1A. Achievement of ESPEN Energy Recommendations across PG-SGA-SF Malnutrition Risk Categories

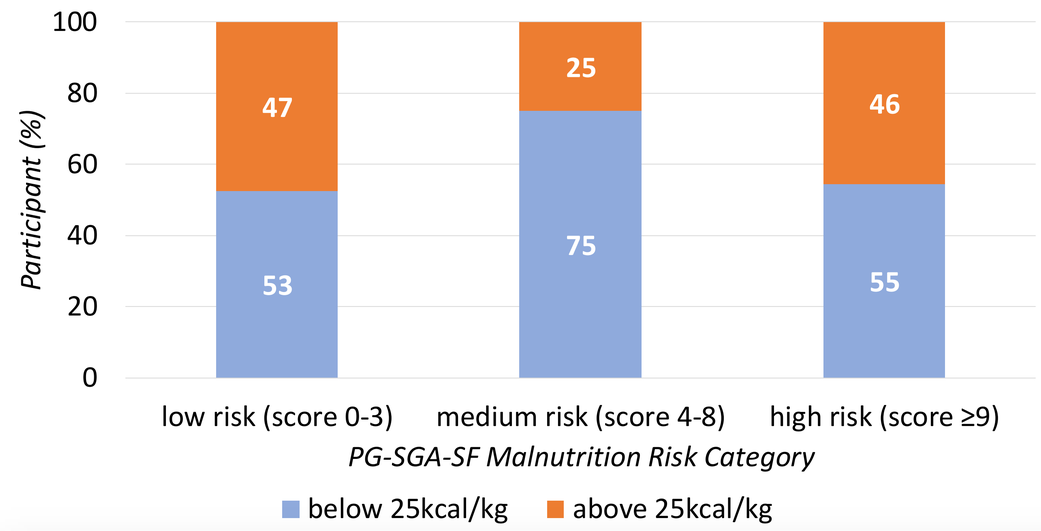


Figure 1B. Achievement of ESPEN Protein Recommendations across PG-SGA-SF Malnutrition Risk Categories

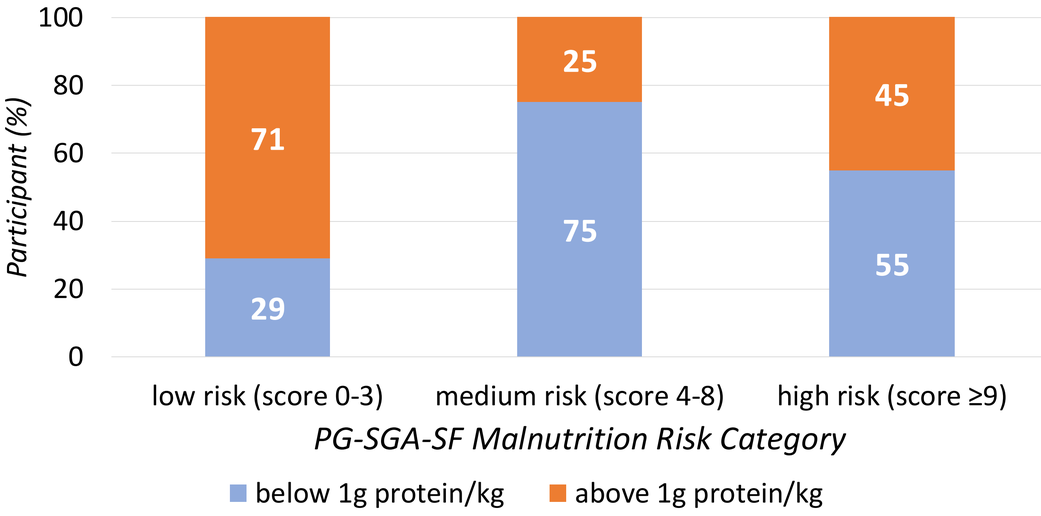


Table 1. PG-SGA-SF Food Intake Rating and Energy and Protein ESPEN Requirements Met in 24-hour recall

PG-SGA-SF Food Intake Rating	<25 kcal/kg n (%)	≥25 kcal/kg n (%)	<1g protein/kg n (%)	≥1g protein/kg n (%)
Less than usual (N=28)	18 (64)	10 (36)	14 (50)	14 (50)
Unchanged (N=27)	16 (59)	11 (41)	10 (37)	17 (63)
More than usual (N=6)	1 (17)	5 (83)	2 (33)	4 (67)

Conclusions

A large proportion of patients commencing SACT were classified as medium-high nutritional risk and reported energy and/or protein intakes below ESPEN recommendations, assessed via 24-hour recall. The food intake domain alone did not identify all participants who reported energy or protein intakes below ESPEN oncology guidelines. Further, over half of participants classified as low malnutrition risk, as per PG-SGA-SF score, reported energy intakes below 25kcal/kg, while one-third reported intakes below 1g protein/kg, at treatment initiation. These findings highlight the importance of considering the full PG-SGA-SF complemented by individualised dietary assessment to identify patients who may benefit from early intervention in the oncology setting.

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