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Introduction

Malnutrition is associated with poor outcomes in patients undergoing pancreatico-duodenectomy (1,2), and over recent years the assessment of nutritional status has identified different categories of malnutrition (3). However, historical data focused primarily on weight and body mass index (BMI) (4).

Nutritional assessment is frequently confused with nutritional screening in the literature. Nutritional screening tools are developed to identify patients at risk of malnutrition, whereas nutritional assessment identifies patients with malnutrition. When 12 different assessment tools were assessed, none were found to correlate with surgical outcomes (5).

However clinical evaluation of sarcopenia, does correlate with surgical complications, is an independent variable for failure to rescue from a surgical complication and is associated with an increased 3 year mortality (1,3).

Aim

To assess the incidence of pre-operative malnutrition and sarcopenia as assessed by Malnutrition Universal Screening Tool (MUST), body mass index (BMI), percentage weight loss and hand grip strength (HGS) prior to pancreatico-duodenectomy (PD).

Methods

Dietetic records of consecutive patients undergoing PD were retrospectively analysed and data divided by BMI category, age and sex. HGS was analysed as a percentage of a gender and age specific, with <85% of the mean consider a risk factor for sarcopenia. Data were analysed using Pearsons correlations and descriptive statistics in SPSS (version 28).

Figure 2: Correlations between assessment methods.

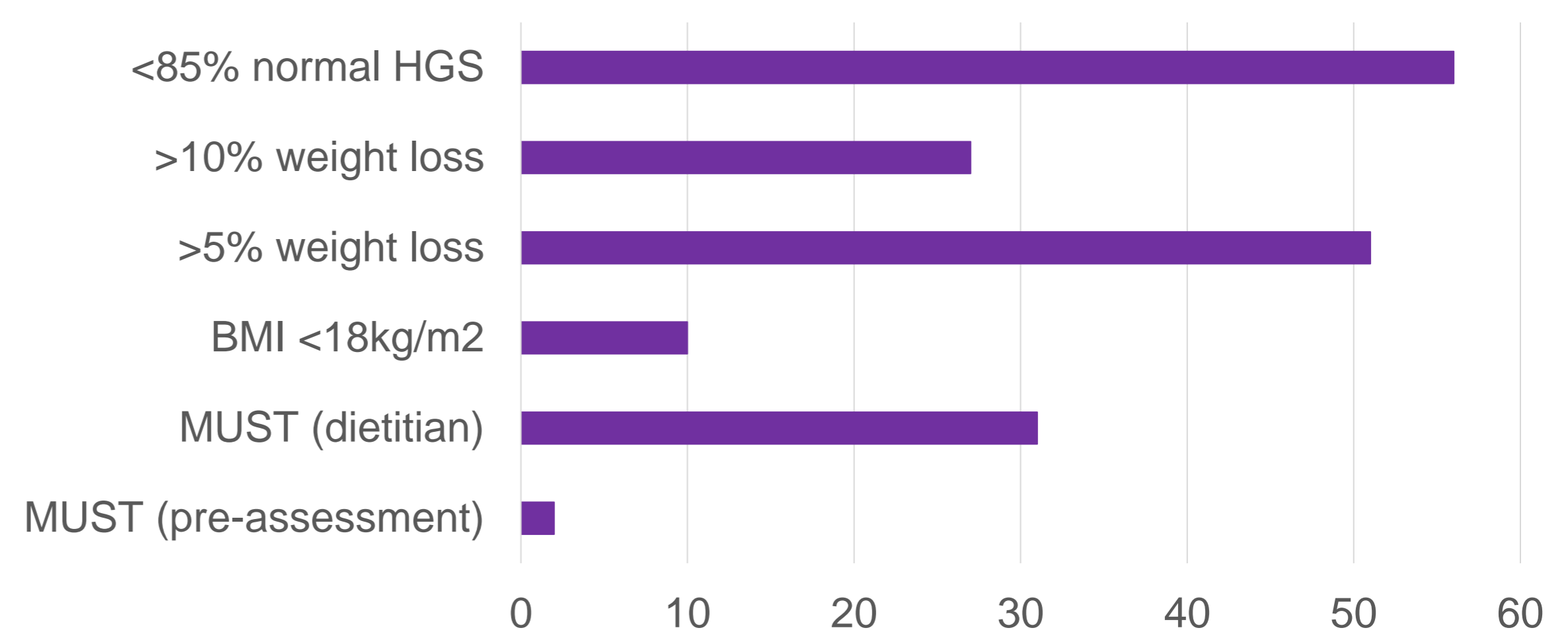
		MUST (pre-ass)	MUST (dietitian)	BMI (kg/m ²)	HGS (%mean)	Absolute weight loss (kg)	% weight loss
MUST (pre-ass)	Pearson correlation	1	0.347	-0.29	-0.091	0.149	0.177
	Sig (2 tailed)		<0.001	0.003	0.397	0.136	0.076
	N	104	103	101	89	102	102
MUST (dietitian)	Pearson correlation	0.347	1	-0.394	-0.209	0.759	0.820
	Sig (2 tailed)	<0.001		<0.001	0.015	<0.001	<0.001
	N	103	172	168	135	170	170
BMI (kg/m ²)	Pearson correlation	-0.290	-0.394	1	0.162	-0.150	-0.335
	Sig (2 tailed)	0.03	<0.001		0.061	0.052	<0.001
	N	101	168	172	134	168	168
HGS (<85%)	Pearson correlation	-0.091	-0.209	0.162	1	-0.179	-0.224
	Sig (2 tailed)	0.397	0.015	0.061		0.037	0.009
	N	89	135	134	137	135	135
Absolute weight loss (kg)	Pearson correlation	0.149	0.759	-0.150	-0.179	1	0.953
	Sig (2 tailed)	0.136	<0.001	0.52	0.37		<0.001
	N	102	170	168	135	173	173
% weight loss	Pearson correlation	0.177	0.820	-0.336	-0.224	0.953	1
	Sig (2 tailed)	0.076	<0.001	<0.001	0.009	<0.001	
	N	102	170	168	135	173	173

HGS – Hand Grip Strength; BMI – Body Mass index; MUST – Malnutrition Universal Screening tool

Conclusion

- MUST scores completed at pre-assessment under report the incidence of malnutrition. This may have implications for surgical coding, and pre-operative dietetic referral.
- Dietitian-completed nutritional screening correlated with all markers of nutritional risk, and sarcopenia.
- Patients due to undergo PD are at nutritional risk with 31% classified as significant nutritional risk and 56% at risk of sarcopenia.
- Further work should explore the relationship of all nutritional markers with surgical outcome, length of stay and survival.

Figure 1: Incidence of malnutrition using different tools



HGS – Hand Grip Strength; BMI – Body Mass index; MUST – Malnutrition Universal Screening tool

Results

Data were collected on 183 patients: 55% male; median age 66 (range 32-84) years.

MUST scores calculated in pre-assessment clinic were poorly completed (66% completion rate) and identified nutritional risk in 3 (2%) patients. Completion of the same MUST tool by the dietitian classified 57 (31%) patients as being at nutritional risk.

According to the alternate measures malnutrition was identified in 10% (BMI<18kg/m²); 51% (>5% weight loss); 27% (>10% weight loss) and sarcopenia in 56% (<85% normal HGS). (Figure 1)

BMI and 5% weight loss should correlate with MUST as they form part of the MUST calculation, but correlations with both were only seen when MUST was completed by a dietitian (p<0.001, p<0.001 respectively), only BMI was correlated with MUST when completed in the pre-assessment clinic (p<0.03). (figure 2)

References

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