STUDY OF THE PREVELANCE OF MALNUTRITION IN SOME EGYPTIAN PATIENTS WITH CROHN'S DISEASE AND IT'S PROGNOSTIC SIGNIFICANCE

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INTRODUCTION

Crohn's disease (CD) is a chronic, relapsing transmural inflammatory disorder of unknown etiology with genetic, immunologic, and environmental influences that can involve anywhere in the gastrointestinal tract.

Malnutrition is a highly prevalent problem in patients with crohn's disease (CD). It is strongly associated with poor clinical outcomes and quality of life.

Several contributing factors include decreased nutrient intake, malabsorption, increased energy expenditure, and increased gastrointestinal losses contribute to protein energy malnutrition and specific micronutrient deficiencies in CD such as iron, zinc, magnesium, calcium, vitamin D and vitamin B12.

Prealbumin is a preferred marker for protein malnutrition. It does not reflect overall protein status. It's short half-life of 2 days can reflect recent food intake so it is used to evaluate the early response to nutritional support.

The Subjective Global Assessment (SGA), is a validated nutritional assessment method that diagnoses malnutrition and provides important prognostic information in different patient populations. Patients are classified as well nourished (class A), moderately malnourished (class B) , or severely malnourished (class c) according to different parameters that cover the patient's history and physical examination.

AIM OF THE WORK

The aim of the work was to assess the prevalence of malnutrition in CD patients and its prognostic significance regarding the severity of the disease, the number of relapses, the number of hospital admissions, the length of hospital stays, and response to treatment.
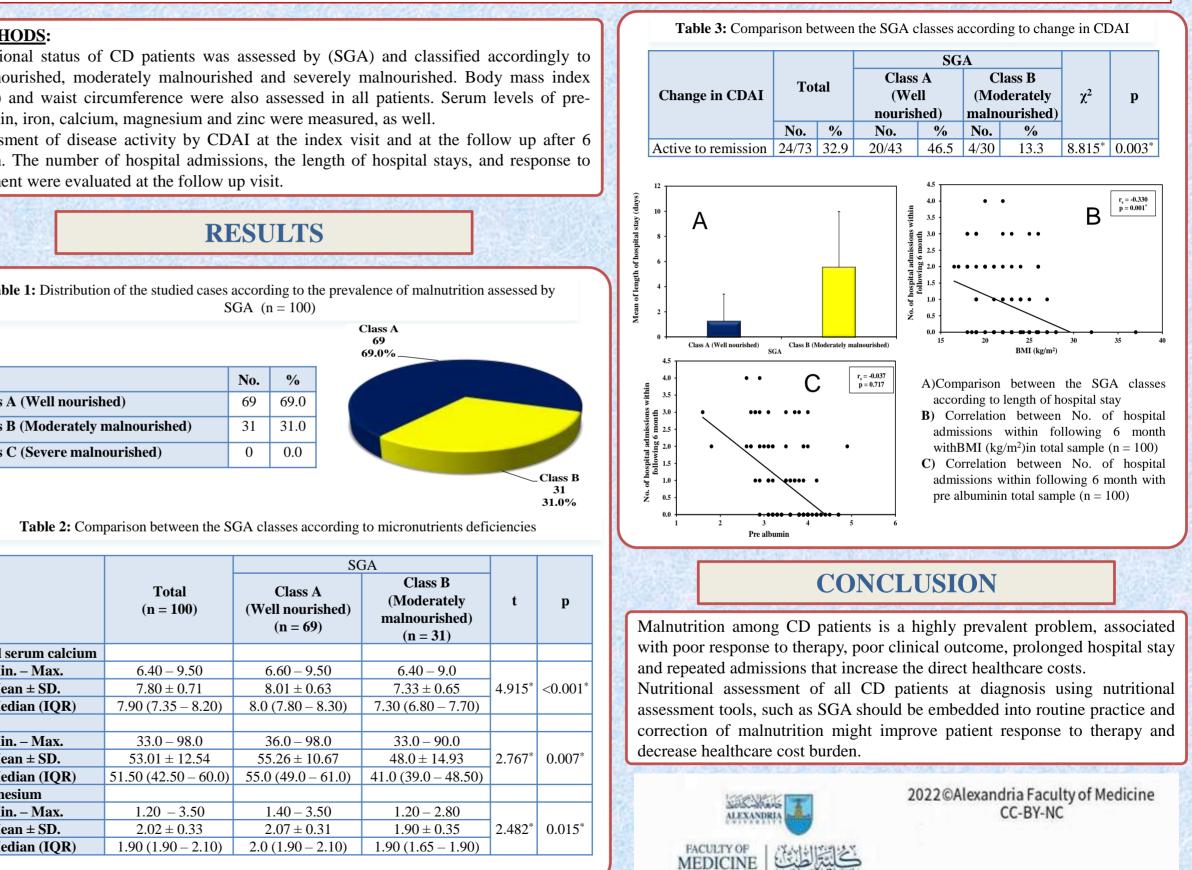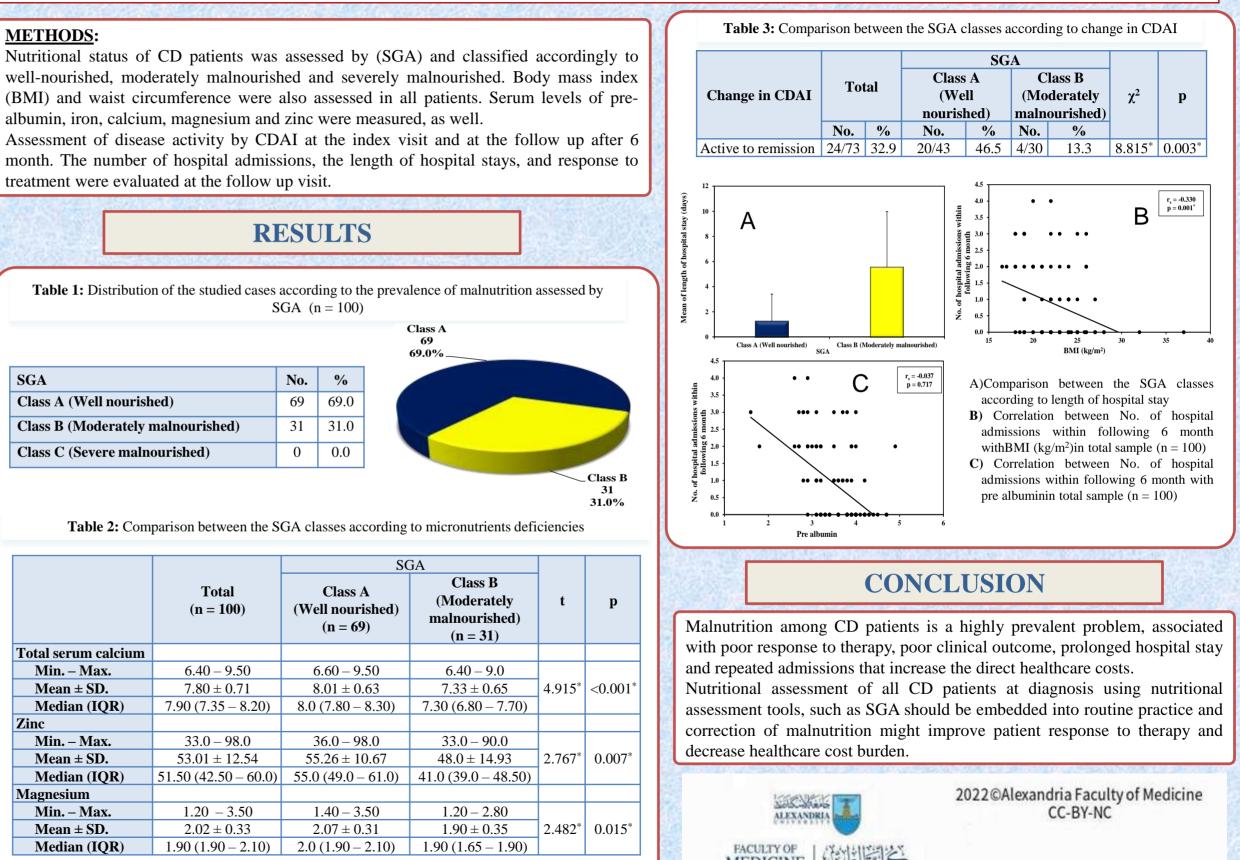
SUBJECTS AND METHODS

SUBJECTS:
the study included 100 patients diagnosed with crohn's disease, recruited from gastroenterology outpatient clinic as well as patients admitted to Alexandria main University hospital at gastroenterology ward. Diagnosis was based on clinical assessment, laboratory markers as C- reactive protein and fecal calprotectin, ileo-colonoscopy and biopsy, and CT entero-colonography if needed.
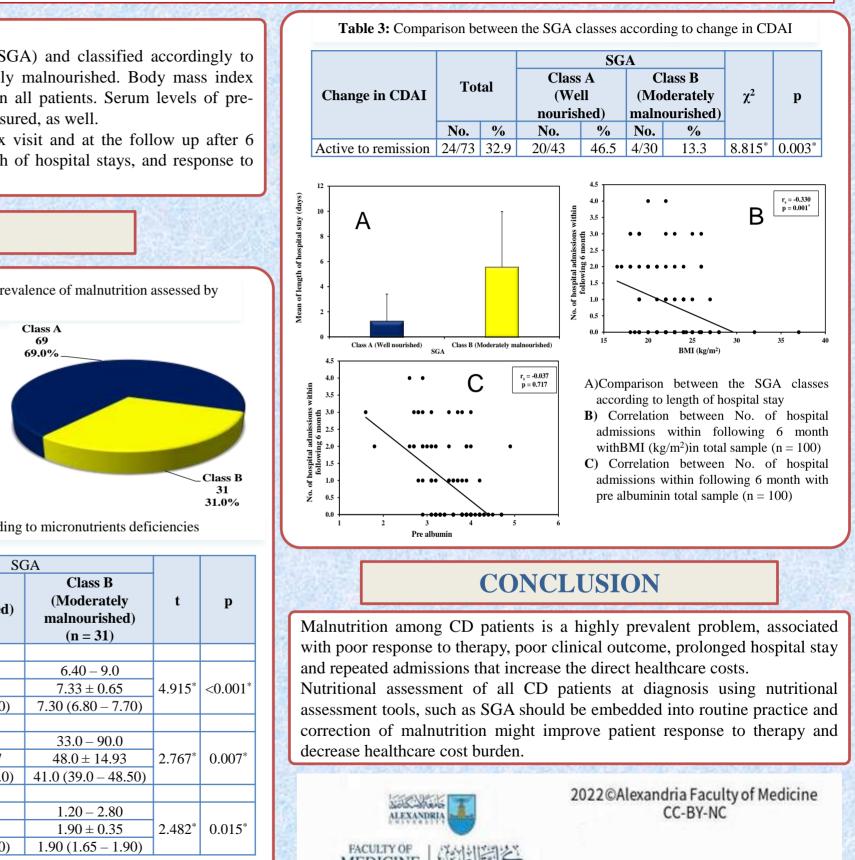
METHODS:
Nutritional status of CD patients was assessed by (SGA) and classified accordingly to well-nourished, moderately malnourished and severely malnourished. Body mass index (BMI) and waist circumference were also assessed in all patients. Serum levels of pre-albumin, iron, calcium, magnesium and zinc were measured, as well.
Assessment of disease activity by CDAI at the index visit and at the follow up after 6 month. The number of hospital admissions, the length of hospital stays, and response to treatment were evaluated at the follow up visit.

RESULTS

Table 1: Distribution of the studied cases according to the prevalence of malnutrition assessed by SGA (n = 100)

SGA	No.	%
Class A (Well nourished)	69	69.0
Class B (Moderately malnourished)	31	31.0
Class C (Severe malnourished)	0	0.0

Class A
69
69.0%

Class B
31
31.0%

Table 2: Comparison between the SGA classes according to micronutrients deficiencies

	Total (n = 100)	SGA		t	p
		Class A (Well nourished) (n = 69)	Class B (Moderately malnourished) (n = 31)		
Total serum calcium					
Min. – Max.	6.40 – 9.50	6.60 – 9.50	6.40 – 9.0	4.915*	<0.001*
Mean ± SD.	7.80 ± 0.71	8.01 ± 0.63	7.33 ± 0.65		
Median (IQR)	7.90 (7.35 – 8.20)	8.0 (7.80 – 8.30)	7.30 (6.80 – 7.70)		
Zinc					
Min. – Max.	33.0 – 98.0	36.0 – 98.0	33.0 – 90.0	2.767*	0.007*
Mean ± SD.	53.01 ± 12.54	55.26 ± 10.67	48.0 ± 14.93		
Median (IQR)	51.50 (42.50 – 60.0)	55.0 (49.0 – 61.0)	41.0 (39.0 – 48.50)		
Magnesium					
Min. – Max.	1.20 – 3.50	1.40 – 3.50	1.20 – 2.80	2.482*	0.015*
Mean ± SD.	2.02 ± 0.33	2.07 ± 0.31	1.90 ± 0.35		
Median (IQR)	1.90 (1.90 – 2.10)	2.0 (1.90 – 2.10)	1.90 (1.65 – 1.90)		

Table 3: Comparison between the SGA classes according to change in CDAI

Change in CDAI	Total		SGA				χ^2	p
			Class A (Well nourished)		Class B (Moderately malnourished)			
	No.	%	No.	%	No.	%		
Active to remission	24/73	32.9	20/43	46.5	4/30	13.3	8.815*	0.003*

A

B
$r_s = -0.330$
$p = 0.001^*$

C
$r_s = -0.037$
$p = 0.717$

A) Comparison between the SGA classes according to length of hospital stay
B) Correlation between No. of hospital admissions within following 6 month withBMI (kg/m²)in total sample (n = 100)
C) Correlation between No. of hospital admissions within following 6 month with pre albuminin total sample (n = 100)

CONCLUSION

Malnutrition among CD patients is a highly prevalent problem, associated with poor response to therapy, poor clinical outcome, prolonged hospital stay and repeated admissions that increase the direct healthcare costs.
Nutritional assessment of all CD patients at diagnosis using nutritional assessment tools, such as SGA should be embedded into routine practice and correction of malnutrition might improve patient response to therapy and decrease healthcare cost burden.

ALEXANDRIA
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