



# NUTRITION INTERVENTION IS BENEFICIAL IN NEW ONSET ESOPHAGEAL CANCER PATIENTS RECEIVING CONCURRENT CHEMORADIOTHERAPY

Wei-Ning Wang, Mei-Fang Yang

Department of Food and Nutrition, Taichung Veterans General Hospital, Taiwan  
Address : 1650 Taiwan Boulevard Sect. 4, Taichung, Taiwan 40705, ROC  
Tel: 886-4-23592525 Ext. 2620 e-mail: sherry@vghtc.gov.tw

## BACKGROUND :

Patients with esophageal cancer undergoing radiotherapy and/or chemotherapy often suffer from poor dietary intake due to dysphagia, parageusia, xerostomia, diarrhea, dysgeusia, mouth sores, and pain. Malnutrition increases the risk of infections, treatment toxicity and health-care costs and decreases response to treatment and quality of life.

## OBJECTIVE :

The aim of this study was to investigate the impact of early nutrition intervention on body weight and nutritional status in new onset esophageal cancer inpatients receiving concurrent chemoradiotherapy (CCRT), as compared to usual practice.

## METHODS :

We retrospectively analyzed the clinical documentation of new esophageal cancer cases in 42 inpatients. If patients experienced unintended weight loss, impaired food intake, poor appetite, nausea, vomiting, constipation or diarrhea, BMI<18.5Kg/m<sup>2</sup>, or required enteral feeding, they were defined as at risk of malnutrition, and should be referred for a complete nutritional assessment and nutrition intervention by a dietitian. Twenty-eight (28) cases were screened by nurses as having high nutritional risk and referred to the dietitian for early nutrition intervention (nutrition intervention group, NG) before they were submitted to CCRT, while the other 14 patients did not receive specifically designed early nutrition support program (control group, CG). The outcomes of these two groups were statistically compared.

## RESULTS :

After the CCRT, no significant weight loss (post-CCRT vs. pre-CCRT: 59.0±12.2 vs. 59.0±12.3, *p*=0.959) or BMI drop (21.9±3.8 vs. 21.9±3.6, *p*=0.930) were found in NG patients, but there were significant weight loss (58.7±9.0 vs. 65.7±8.7, *p*<0.001) and BMI drop (20.4±3.1 vs. 21.9±3.8, *p*<0.001) in CG patients. Serum albumin and hemoglobin decreased in both the NG and CG patients after CCRT.

Table1. Comparison between Nutrition group and Control group before intervention.

		Nutrition Group (n=28)		Control Group (n=14)		p-value
		Mean	Std	Mean	Std	
sex (n, %)	male	27	96.4%	14	100.0%	
	female	1	3.6%	0	0.0%	
Age		58.4	± 10.7	53.9	± 9.0	0.187
BW(Kg)		59.0	± 12.3	65.7	± 8.7	0.077
BMI(Kg/m <sup>2</sup> )		21.9	± 3.6	21.9	± 3.8	0.376
Alb(g/dl)		4.0	± 0.5	4.0	± 0.4	0.826
Hgb(g/dl)		12.9	± 2.3	13.3	± 1.2	0.583
T.Chol.(mg/dl)		177.6	± 38.3	164.6	± 43.2	0.378
TG(mg/dl)		114.5	± 47.3	127.6	± 69.0	0.516

BW: Body weight, BMI: Body Mass Index, Alb: Serum Albumin, Hgb: Hemoglobin, T.Chol.: Total Cholesterol, TG: Triglyceride

Table2. Comparison of Pre-test and Post-test in Nutrition Group (N=28).

	Pre-test		Post-test		p-value
	Mean	Std	Mean	Std	
BW(Kg)	59.0	± 12.3	59.0	± 12.2	0.959
BMI(Kg/m <sup>2</sup> )	21.9	± 3.6	21.9	± 3.8	0.930
Alb(g/dl)	4.0	± 0.5	3.8	± 0.5	0.028*
Hgb(g/dl)	12.9	± 2.3	11.1	± 1.5	0.000*
T.Chol.(mg/dl)	177.6	± 38.3	184.0	± 27.6	0.729
TG(mg/dl)	114.5	± 47.3	140.8	± 71.9	0.364

\**p*<0.05

Table3. Comparison of Pre-test and Post-test in Control Group (N=14).

	Pre-test		Post-test		p-value
	Mean	Std	Mean	Std	
BW(Kg)	65.7	± 8.7	58.7	± 9.0	0.000*
BMI(Kg/m <sup>2</sup> )	21.9	± 3.8	20.4	± 3.1	0.000*
Alb(g/dl)	4.0	± 0.4	3.4	± 0.7	0.010*
Hgb(g/dl)	13.3	± 1.2	10.8	± 1.7	0.000*
T.Chol.(mg/dl)	164.6	± 43.2	183.6	± 49.7	0.928
TG(mg/dl)	127.6	± 69.0	80.5	± 32.2	0.093

\**p*<0.05

## CONCLUSIONS :

Early nutrition intervention prevented weight loss and BMI drop in patients with esophageal cancer receiving radiotherapy and/or chemotherapy. Though, patients did not have nutritional risk before therapy, they also experienced body weight loss after two months. This result suggests that nutritional intervention should be initiated for every esophageal cancer patient before chemoradiotherapy.

## KEYWORDS :

Esophageal cancer, Nutrition intervention, Concurrent chemoradiotherapy.

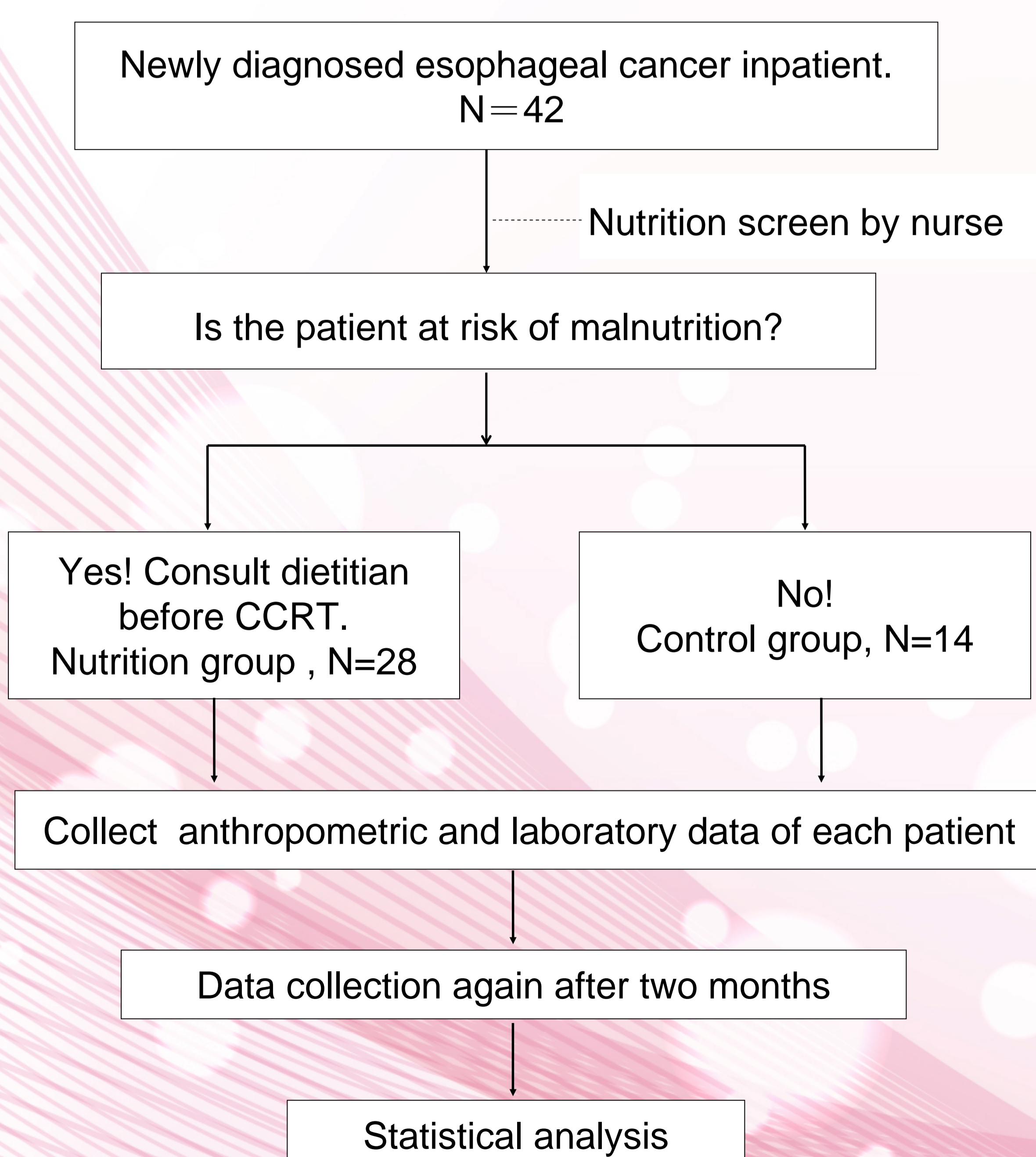


Figure1. Study design flow chart

