

Personalized Nutritional Risk Assessment of Digestive Tract Cancer

a Systematic Review and Meta-analysis

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INTRODUCTION

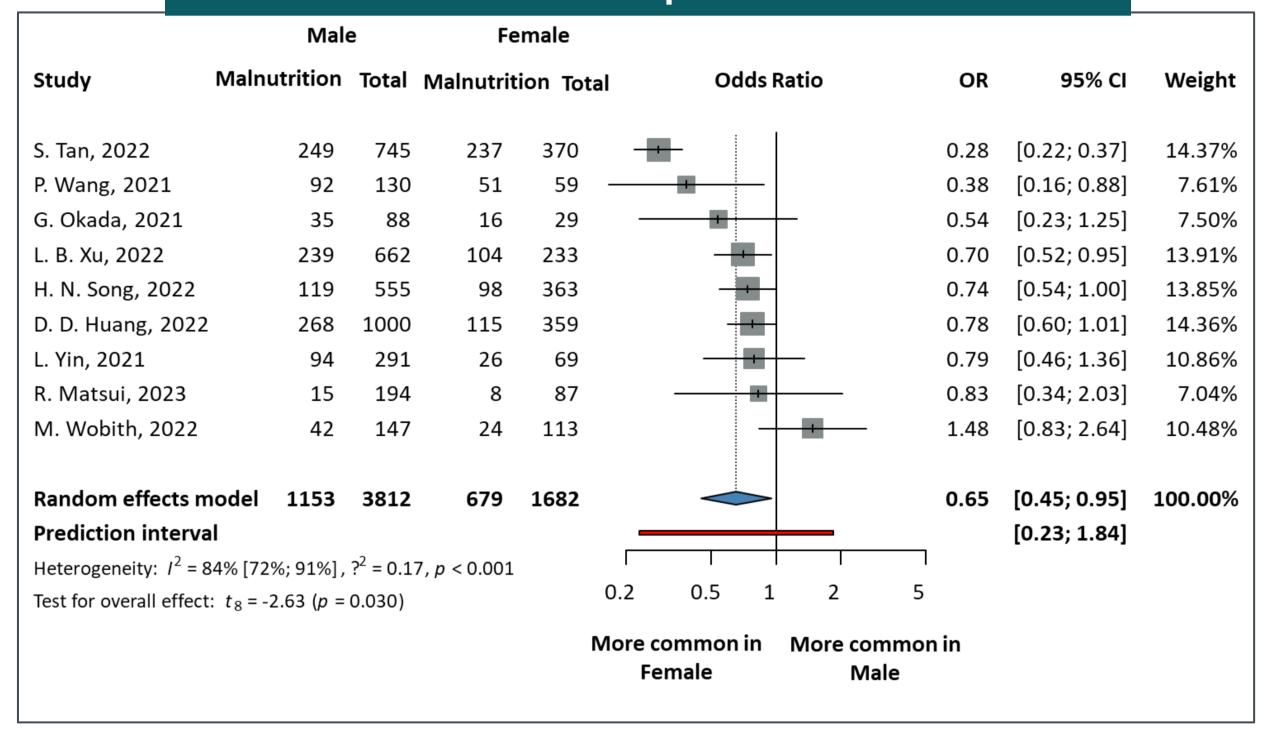
The prevalence of malnutrition in patients with cancer varies greatly with tumor type and stage. Its pathogenic mechanisms are incompletely elucidated. We investigated the risk factors for malnutrition in gastrointestinal (GI) and hepato-biliopancreatic (HBP) cancer patients.



METHODS

We performed a systematic search in PubMed, Embase, and Cochrane Library (28.02.2023). The study protocol was registered on PROSPERO (CRD42022369200). We included studies with the following PECO framework: Population: digestive system cancer patients, Exposure/Comparison: any reported potential risk factor, Outcome: risk or diagnosis of malnutrition. The random-effects model yielded the pooled odds ratios (OR) and 95% confidence intervals (CIs). The Quality in Prognostic Studies (QUIPS) tool was used for risk of bias assessment.

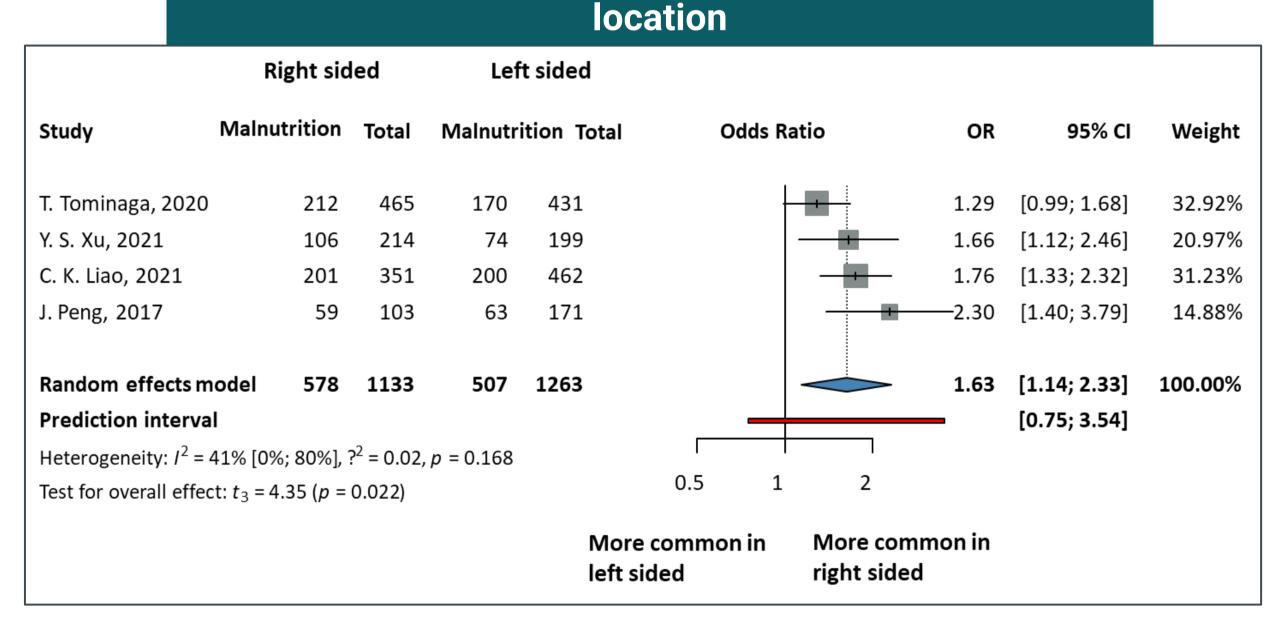
Association between malnutrition and sex in resectable GI cancer patients



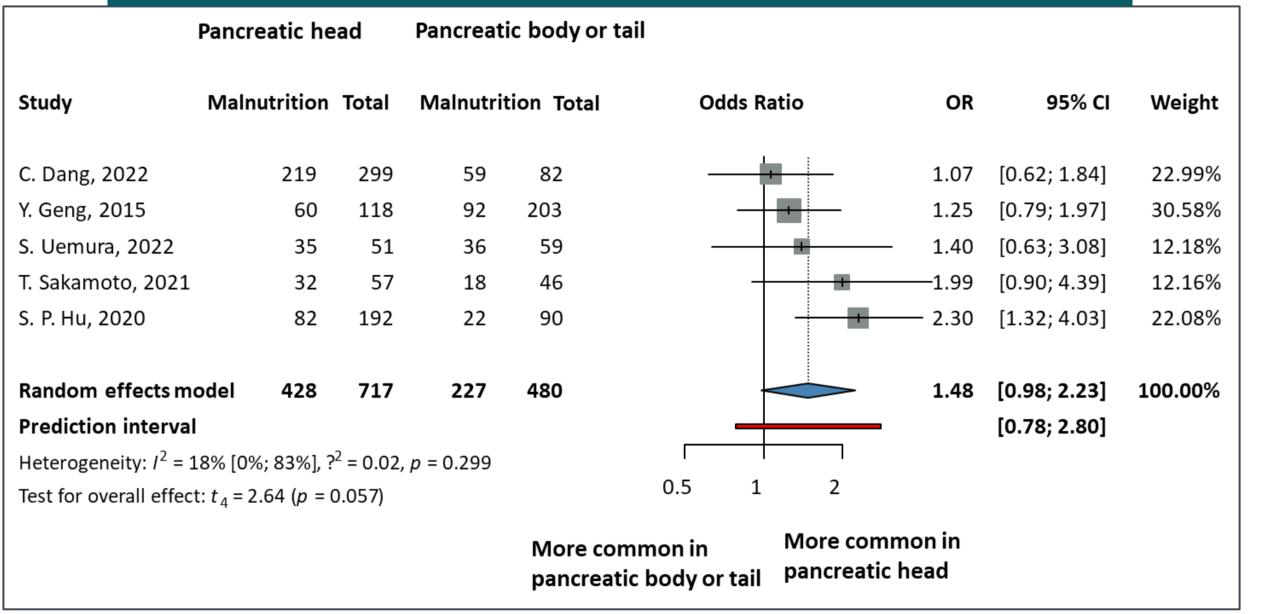
Association between malnutrition and sex in biliary tract cancer patients

	Ma	Female								
Study N	/lalnutrition	Total	Malnutri	ition 7	otal	Odds Ratio	OR	95% CI	Weight	
L. Sun, 2021	93	199	77	172				1.08	[0.72; 1.63]	43.39%
F. Terasaki, 2020	29	115	7	34		_		- 1.30	[0.51; 3.30]	8.39%
J. Wang, 2021	86	201	82	229				1.34	[0.91; 1.98]	48.22%
Random effects mo	del 208	515	166	435				1.22	[0.89; 1.67]	100.00%
Prediction interval									[0.21; 7.01]	
Heterogeneity: $I^2 = 0\% [0\%; 90\%]$, $?^2 = 0$, $p = 0.751$										
Test for overall effect: $t_2 = 2.69$ ($p = 0.115$)					0.2	0.5	1 2	5		
						ommor male		ommon in Iale		

Association between malnutrition and colon tumor



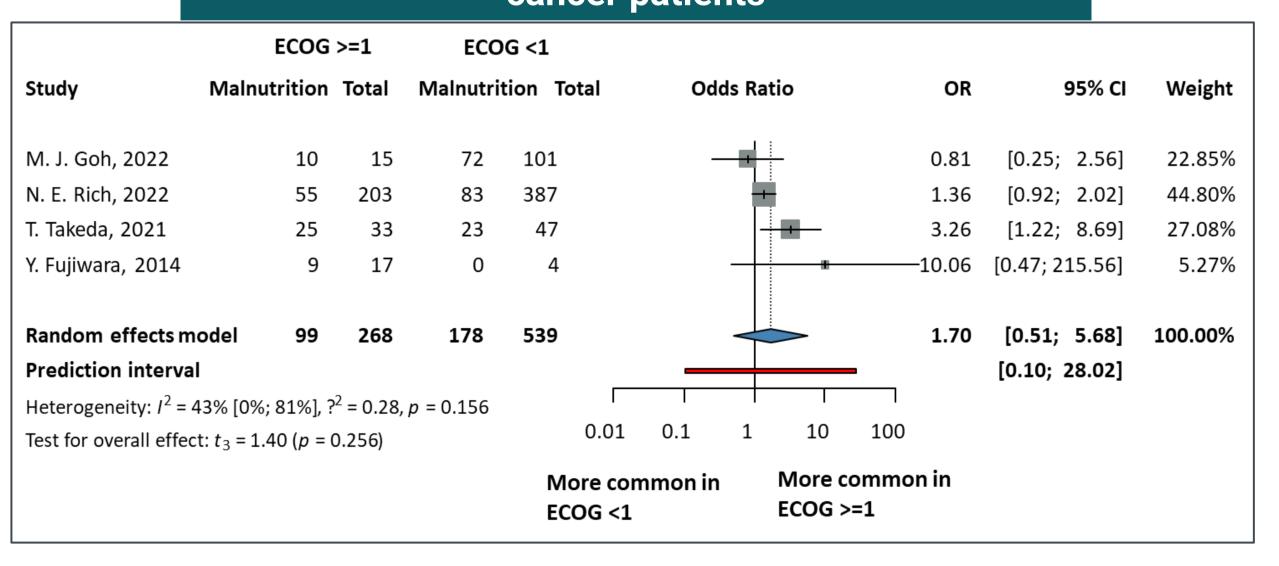
Association between malnutrition and pancreatic tumor location



Association between malnutrition and serum CRP level in GI cancer

	Elevate	ed CRP	Decreased CR Malnutrition Total		RP					
Study [Malnutrition	Total				Odds Ratio		OR	95% CI	Weight
M. Qiu, 2015	99	149	322	681			-	2.21	[1.52; 3.20]	62.47%
C. Gavazzi, 2011	15	28	21	72		-	-	2.80	[1.14; 6.89]	10.67%
M. G. Serna Thomé, 202	20 167	184	125	170			-	3.54	[1.93; 6.47]	23.66%
A. V. G. Fruchtenicht, 20)18 19	23	5	10		+	•	 4.75	[0.92; 24.56]	3.20%
Random effects model	300	384	473	933				2.59	[1.71; 3.93]	100.00%
Prediction interval						.			[1.36; 4.95]	
Heterogeneity: $I^2 = 0\%$ [0%; 85%], $?^2 = 0$, $p = 0.516$							T	7		
Test for overall effect: t_3 =	7.29 (p = 0.00	05)			0.1	0.5 1	2 1	0		
						common in More co				

Association between ECOG >= 1 and cachexia in HBP cancer patients



CONCLUSION

The malnutrition screening test should be chosen with tumor location, sex, and performance status in consideration. Inflammatory markers may be reliable for simplified malnutrition risk assessment. The assessment of nutritional status in patients with digestive system cancer should be personalized.