

Personalized Nutritional Risk Assessment of Digestive Tract Cancer

a Systematic Review and Meta-analysis

Bettina Csilla Budai^{1,2}, Petrana Martinekova^{1,3}, Gefu Cai¹, Dalma Dobszai^{1,4}, Lili Fekete^{1,2}, Hanne Aspelund Normann¹, Jázmin Németh¹, Alíz Fazekas⁴, Eszter Ágnes Szalai^{1,6}, Andrea Szentesi^{1,4}, Vasile Liviu Drug^{1,7}, Péter Hegyi^{1,2,4,8*}, Stefania Bunduc^{1,9,10*}

1. Centre for Translational Medicine, Semmelweis University, Budapest, Hungary, 2. Institute of Pancreatic Diseases, Semmelweis University, Budapest, Hungary, 3. EDU A degree smarter, Kalkara, Republic of Malta, 4. Institute for Translational Medicine, Medical School, University of Pécs, Pécs, Hungary, 5. Department of Biophysics and Radiation Biology, Semmelweis University, Budapest, Hungary, 6. Department of Restorative Dentistry and Endodontics, Semmelweis University, Budapest, Hungary, 7. Grigore T. Popa University of Medicine and Pharmacy, Iași 700115, Romania, 8. Translational Pancreatology Research Group, Interdisciplinary Centre of Excellence for Research Development and Innovation University of Szeged, Szeged, Hungary, 9. Carol Davila University of Medicine and Pharmacy, Bucharest, Romania, 10. Digestive Diseases and Liver Transplantation Center, Fundeni Clinical Institute, Bucharest, Romania
*contributed equally

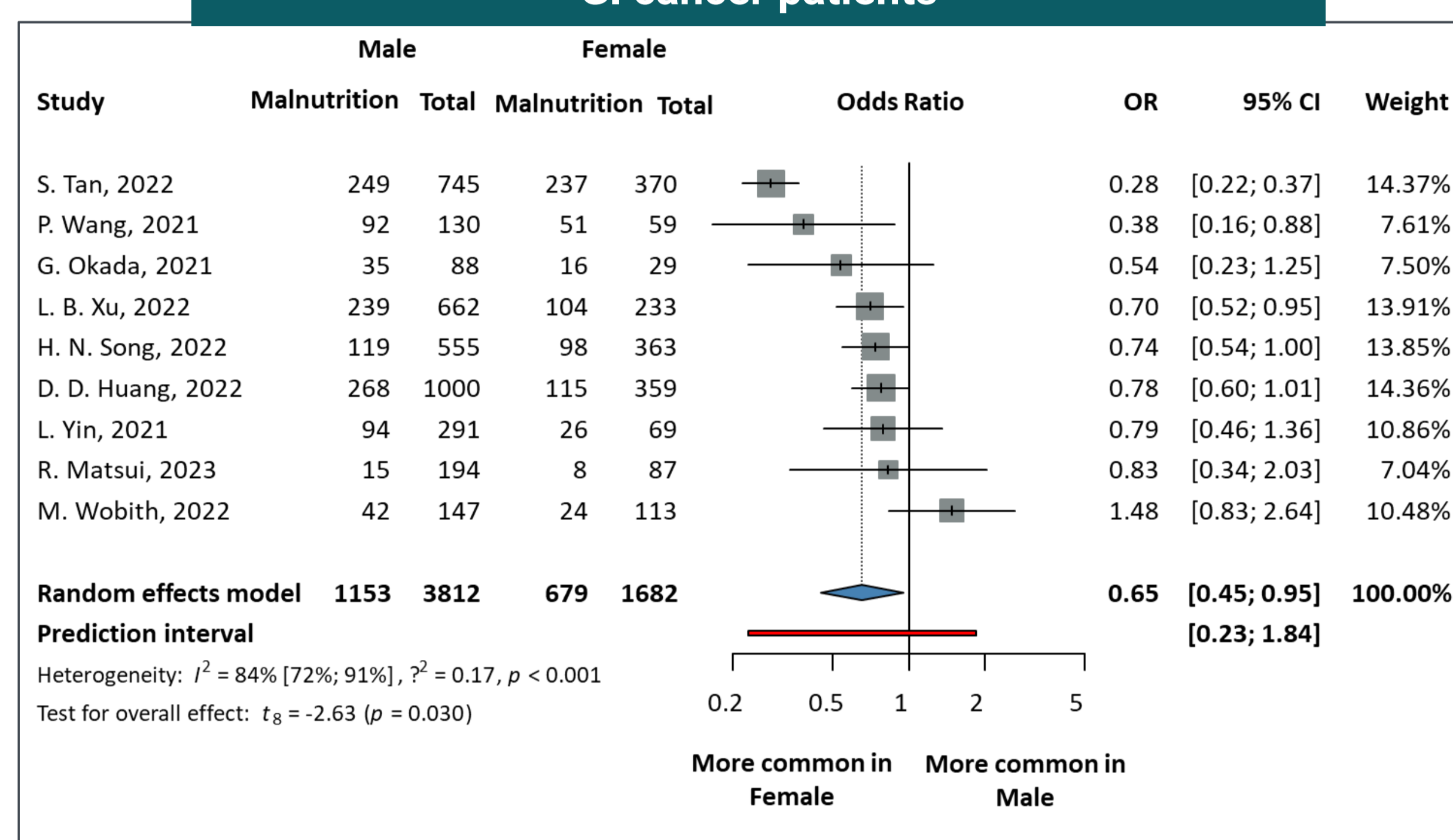
INTRODUCTION

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.

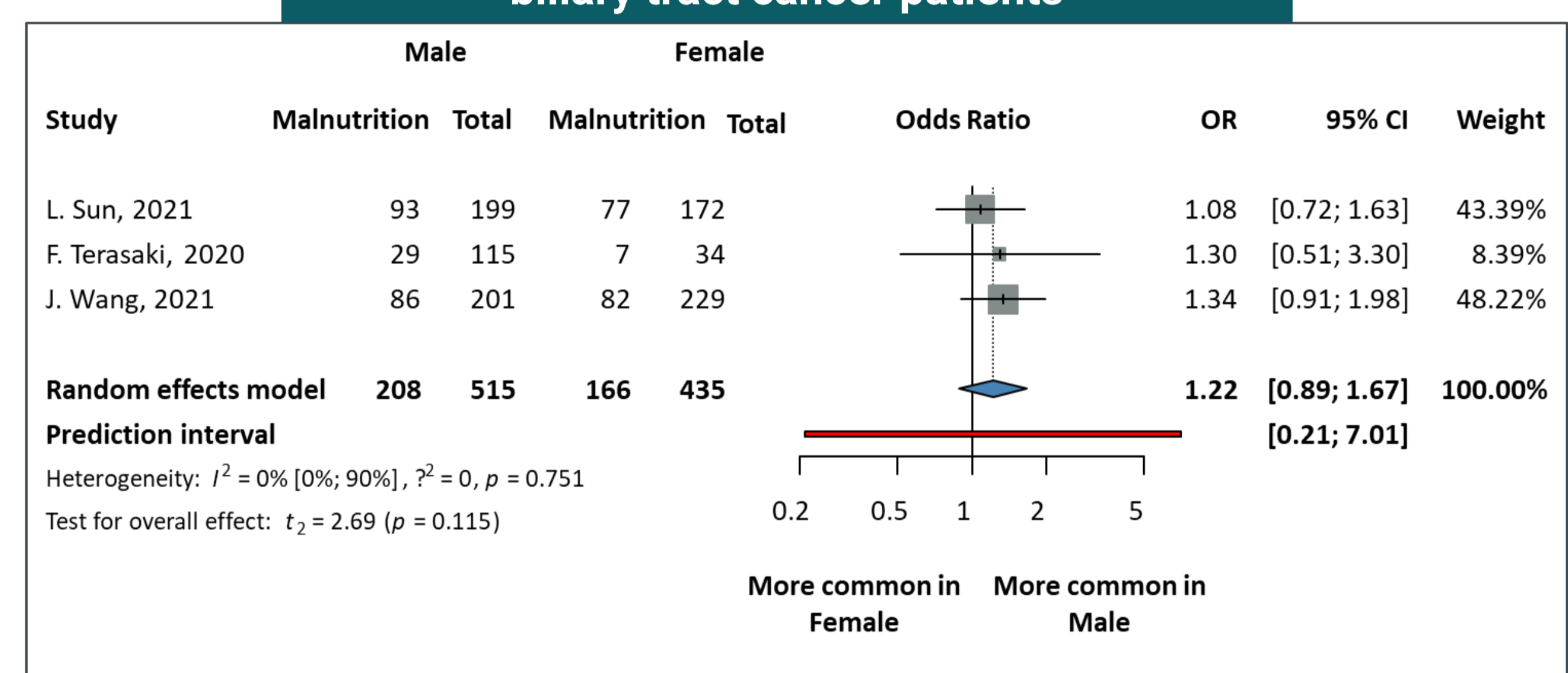
METHODS

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.

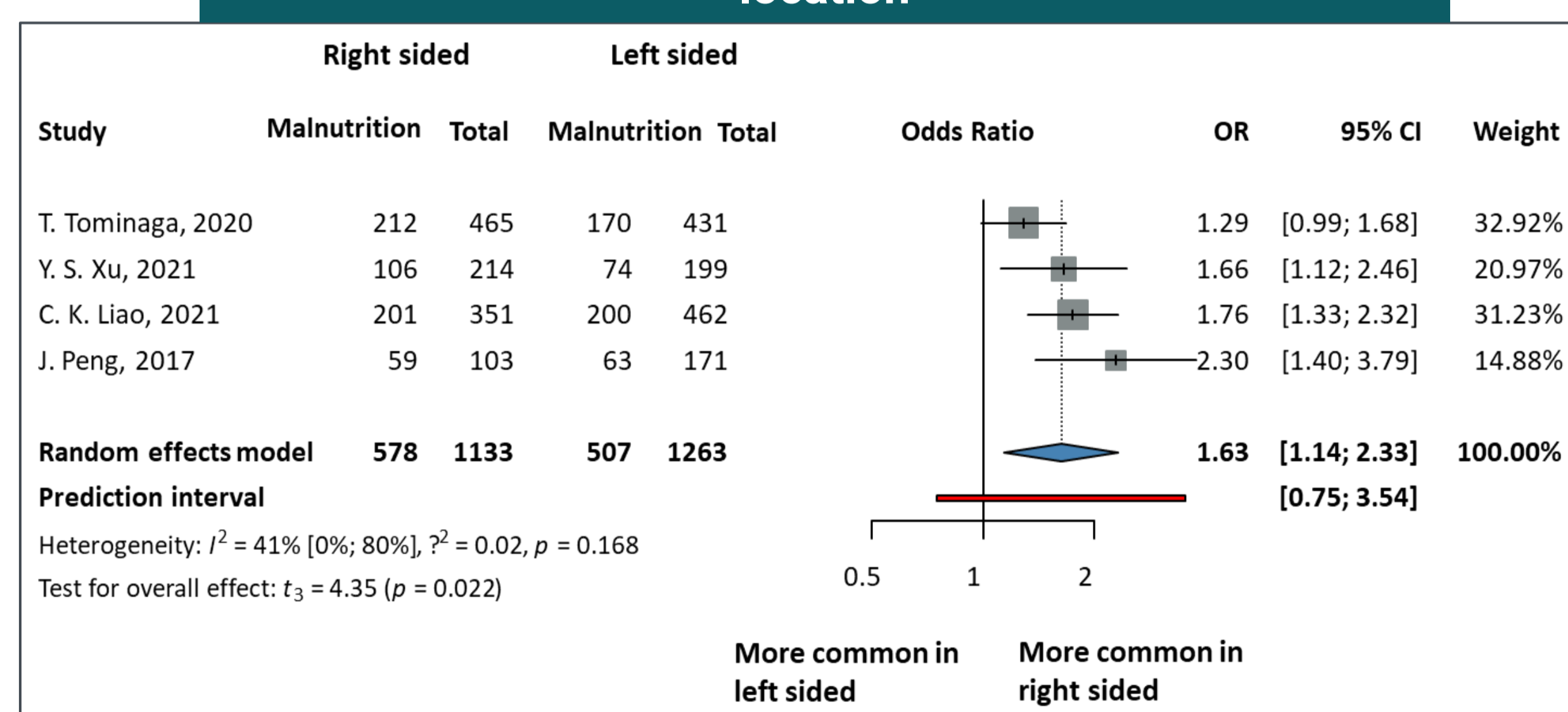
Association between malnutrition and sex in resectable GI cancer patients



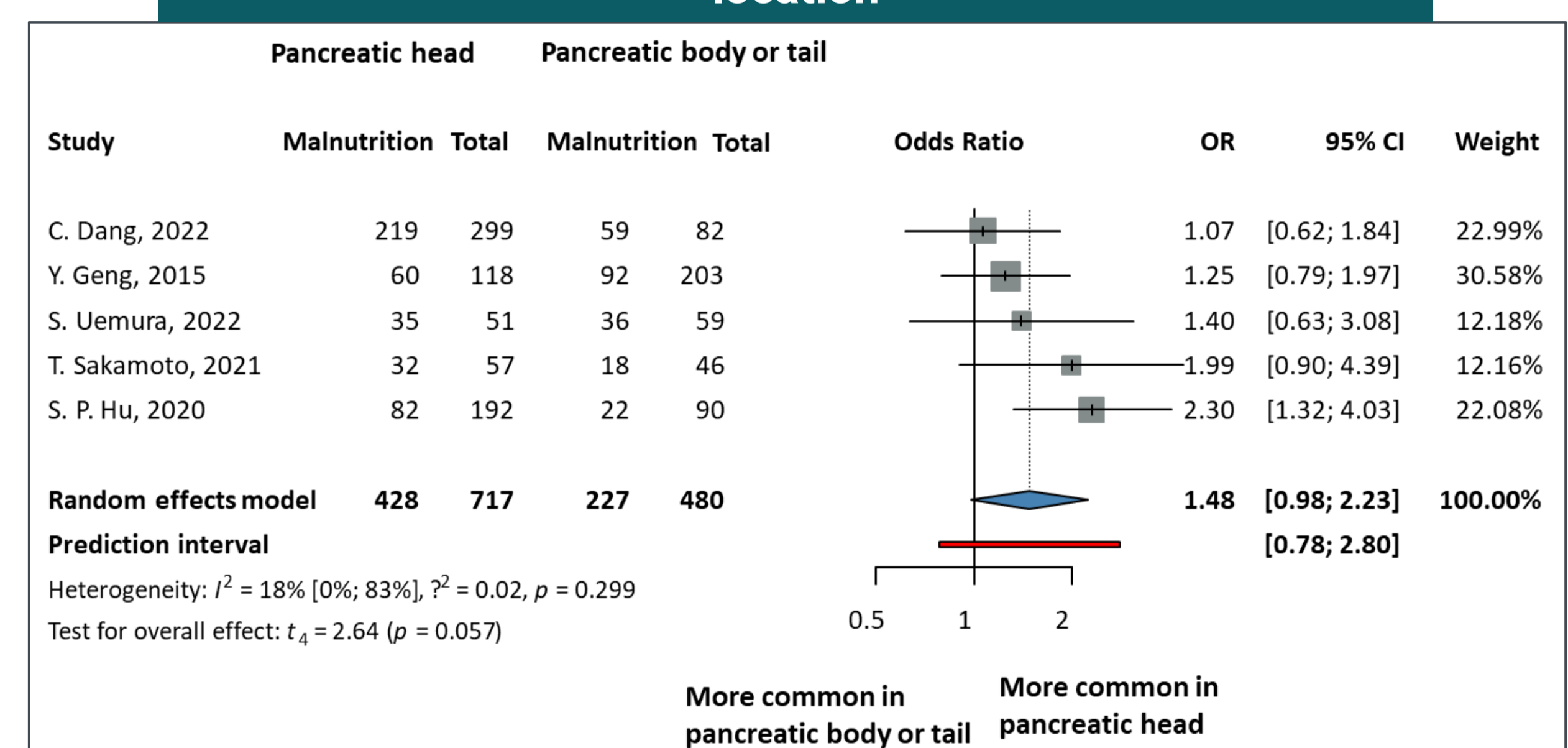
Association between malnutrition and sex in biliary tract cancer patients



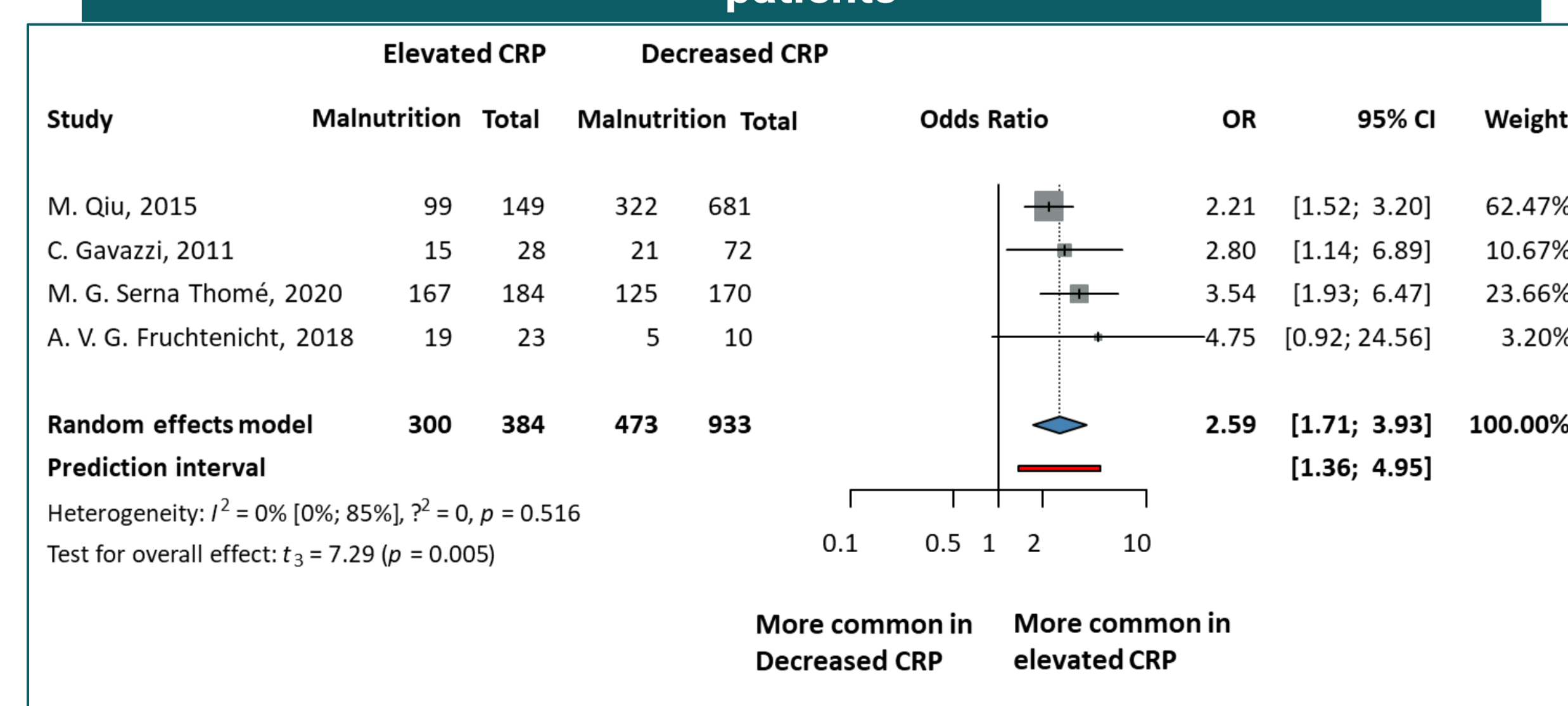
Association between malnutrition and colon tumor location



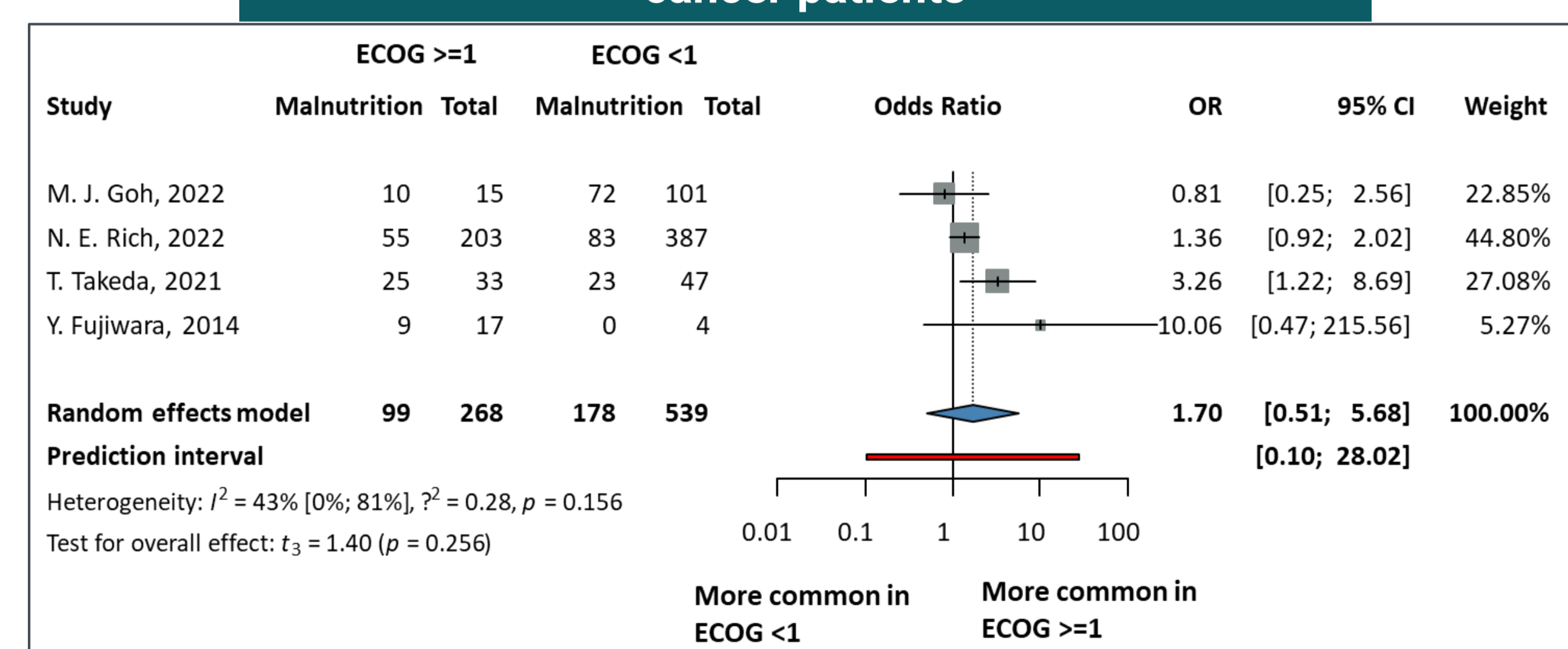
Association between malnutrition and pancreatic tumor location



Association between malnutrition and serum CRP level in GI cancer patients



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.