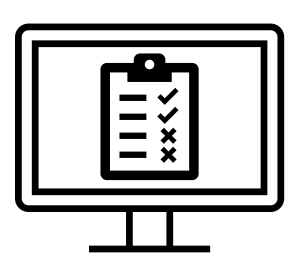


Comorbidities, medications and symptoms as early markers for upper gastrointestinal cancers: a longitudinal matched case control study



Ben McGuirk, MSc, Ekaterina Pazukhina, MSc, Kirsten D. Arendse, MBChB, Pawandeep Virpal, MBChB, Fiona M. Walter, MD, Oleg Blyuss, PhD, Garth Funston, PhD.
Centre for Cancer Screening, Prevention and Early Diagnosis, Wolfson Institute of Population Health, Queen Mary University of London, London, UK

Data



- Electronic healthcare records, England (CPRD Aurum)
- Cancer register data: 2011-2018
- All available history of medical records (except exclusion period prior to cancer diagnosis)

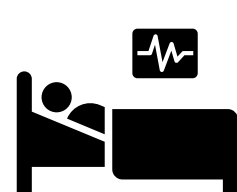
Study design



- Retrospective nested case-control
- Up to 5 matched controls per case
- Matched by general practice, sex, and year of birth (± 3 years)

Population

Cancer cases:

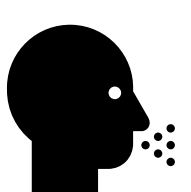


- 12,990 pancreatic
- 11,576 oesophageal
- 8,452 gastric
- 2,691 gallbladder

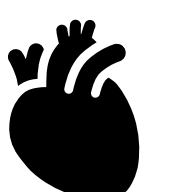


General controls: 178,418

Covariates



• 28 symptoms



• 48 co-morbidities



• 34 medications

- Binary variables (yes = having at least one relevant code in records)
- Temporal representation:
 - recent (1 month - 2 years)
 - long-standing (>2 years)

Methods

- Each cancer was analyzed separately
- Multivariable conditional logistic regression
- Adjustment for demographic (ethnicity, index of multiple deprivation) and lifestyle (most recent smoking status and BMI) factors
- Missing values coded as “unknown”
- Bonferroni correction

Key findings

Shared risk factors

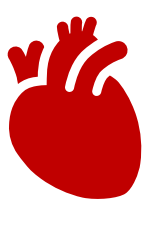
Recent onset risk factors:



• Antacid, PPI



• Epigastric pain, nausea / vomiting, weight loss

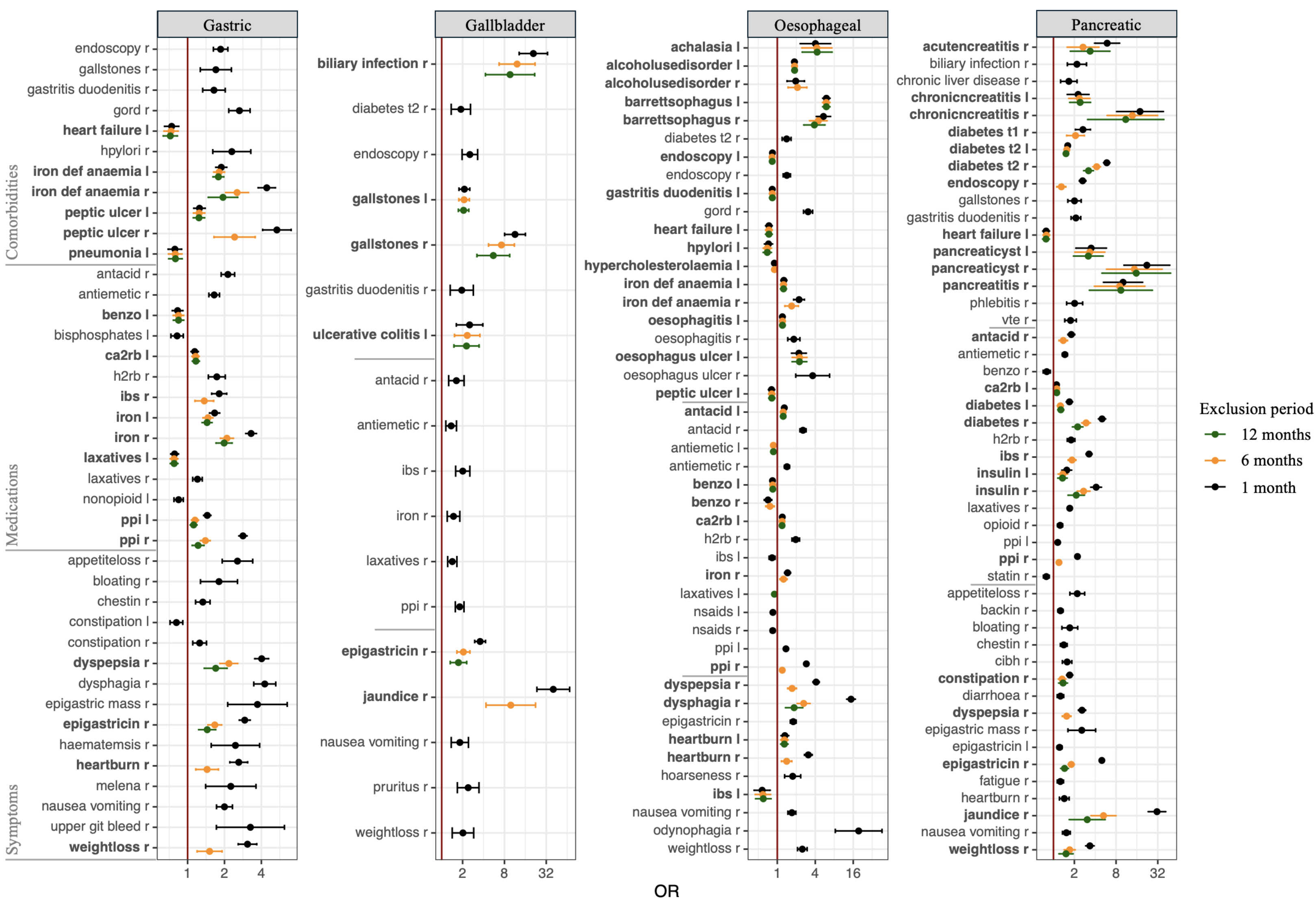


• Diabetes type 2

Pancreatic
Oesophageal
Gastric
Gallbladder



Cancer specific risk factors



Significant temporal associations between comorbidities, symptoms, medications and UGI cancers when excluding 1, 6 and 12 months of observations prior to index date. L= longstanding, r = recent onset. Bold = significant when excluding 6 months of observations

Conclusions

- For majority of risk factors, only recent onset status was significant
- Almost half of identified risk factors remained significant when excluding 6 months of observation prior to index date instead of 1 month
- Comorbidities, symptoms and prescriptions identified within this study, accounting for their recency of onset, could improve the performance of existing cancer risk prediction tools