

Biopsy practice during diagnostic Upper Gastrointestinal Endoscopy in the UK: analysis of 638 000 endoscopies in the National Endoscopy Database

Introduction

Appropriate tissue sampling is vital for lesion diagnosis during endoscopy. We have previously found an association between higher biopsy rates and reduced compliance with national biopsy recommendations (e.g. from ulcers) with higher rates of post endoscopy upper gastrointestinal cancers (PEUGIC).

Methods

Upper gastrointestinal (UGI) endoscopies between 01/01/2019 and 29/02/2020 were analysed from the National Endoscopy Database (NED). Surveillance endoscopies were excluded. Logistic regression analysis examined associations with biopsy rate, biopsies from gastritis or duodenitis and biopsies from ulcers.

Results

638,280 UGI endoscopies were analysed. 289,156 (45.3%) involved biopsies: oesophagus 17.1%, stomach 18.0%, duodenal bulb (D1) 3.9%, second part of the duodenum (D2) 19.4%.

Biopsy rate was associated with: clinical endoscopists OR 1.31 (95% CI 1.29-1.33) and surgeons OR 0.84 (95% CI 0.90-0.95), compared to gastroenterologists; patient age 70-79 OR 1.12 (95% CI 1.05-1.19) (Figure 1); male patients OR 1.07 (CI 95% 1.06-1.08); urgent endoscopy OR 1.38 (CI 95% 1.35-1.39); emergency endoscopy OR 0.37 (95% CI 0.36-0.39); and therapy during endoscopy OR 0.25 (95% CI 0.24-0.27) .

During endoscopy for dysphagia with a normal appearance, only 5232 (36.3%) had biopsies to exclude eosinophilic oesophagitis, with usually too few biopsies taken (mean 4.5

(SD±2.0)). When the endoscopic diagnosis was reportedly normal (excluding dysphagic indications), 35% involved potentially unnecessary biopsies (263557 biopsies). Biopsies were commonly taken from uncomplicated inflammatory conditions: 31% of endoscopic gastritis (58765 biopsies) and 31% of endoscopic duodenitis (15580 biopsies). Biopsies for gastritis/duodenitis were associated with surgeons OR 1.36 (95% CI 1.26-1.46) and clinical endoscopists OR 1.38 (95% CI 1.31-1.45), compared to gastroenterologists.

Mean number of biopsies from oesophageal ulcers was 3.7 (SD±2.1) and from gastric ulcers 3.8 (SD±2.4). Biopsies of gastric or oesophageal ulcers were associated with clinical endoscopists OR 1.51 (95% CI 1.37-1.65) and surgeons OR 0.53 (95% CI 0.50-0.56), compared with gastroenterologists; outpatient procedures OR 1.40 (95% CI 1.27-1.53); and emergency procedures OR 0.66 (95% CI 0.55-0.79).

Conclusions

Analysis of NED reveals a large number of apparently unnecessary biopsies for gastritis or duodenitis or during normal endoscopy. In contrast, in only 36% of normal endoscopies for dysphagia were biopsies taken to rule out EOE. Quality improvement efforts are needed to reduce unnecessary biopsies, increase appropriate biopsies, reduce costs and environmental impact.

Figure 1 Predicted probability of taking a biopsy based on speciality adjusted for patient age

