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## **Adult Coeliac Disease remission assessment: Does a D1 biopsy increase the detection of villous atrophy?**

Lauren J.S. Marks, Michelle S. Lau, Matthew Kurien, Marios Hadjivassiliou, Peter D. Mooney, Simon S. Cross, David S. Sanders

### **Background and aims:**

Recent studies have highlighted that the duodenal bulb (D1) may be a more sensitive site for detecting villous atrophy (VA) in newly diagnosed coeliac disease (CD) patients. However there is a scarcity of data from those with established CD under assessment for remission. The aim of this study was to assess whether duodenal bulb biopsies improved identification of VA compared to biopsies from the second part of the duodenum (D2) alone.

### **Methods:**

251 patients with established CD were prospectively recruited from the endoscopy department at the Royal Hallamshire Hospital between 2013 and 2017. All patients underwent a gastroscopy, with one biopsy taken from the duodenal bulb and four from D2. Biopsies were classified according to Marsh criteria. We assessed concordance of histology between the D1 and D2 sites, and 95% Clopper-Pearson confidence intervals were calculated for all results using a binominal distribution.

### **Results:**

251 patients were recruited (70.5% female, age range 17-81 years, median age 53 years) having been on a gluten-free diet for a median duration of 6 years (range . Concordant results: 35.1% (n=88, 95% CI = 29.16-40.96) had normal duodenal biopsies in both D1 and D2; 32.3% (n=81, 95% CI= 26.49-38.05) had VA in D1 and D2; 18.3% (n=46, 95% CI= 13.54-23.11) had raised intra-epithelial lymphocytes (IELs) only in both D1 and D2. Discordant results: 4.4% (n=11, 95% CI=1.85-6.91) had VA in D1 but not D2; 2.4% (n=6, 95% CI=0.50-4.28) had raised IELs in D1 but normal histology in D2. 2.8% (n=7, 95% CI=0.75-4.83) had VA in D2 but normal histology in D1; 4.8% (n=12, 95% CI=2.14-7.42) had IELs in D2 but normal histology in D1.

### **Conclusions:**

Villous atrophy was confined to the duodenal bulb in 4.4% of patients with established CD. Thus a duodenal bulb biopsy in addition to distal duodenal biopsies **is** mandatory for optimal assessment of adherence to a gluten-free diet in adult CD.

**Commented [MK1]:** Think this should be softer. Only 4.4% and not sure that this should be mandated. Suggest replace with:

Thus a duodenal bulb biopsy in addition to distal duodenal biopsies may be required to accurately assess adherence to a gluten-free diet in adult CD.