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BSG 2016 - Abstract Submission

Small bowel

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THE ROLE OF A POINT OF CARE TEST, SIMTOMAX, IN PREDICTING HISTOLOGICAL REMISSION IN COELIAC DISEASE ON A GLUTEN FREE DIET

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Introduction: Coeliac disease (CD) is a chronic inflammatory enteropathy treated with a gluten free diet (GFD). Clinical symptoms and complications of CD are thought to be associated with ongoing duodenal inflammation due to continued gluten exposure, hence the optimal assessment of response to a GFD is histological remission. However, there is little consensus in the UK on routine re-biopsy during follow up. Duodenal biopsy requires a gastroscopy which is invasive and can be poorly tolerated. Coeliac serology and dietetic evaluation have been used as surrogate markers for histological remission, but the correlation has been shown to be poor. We aimed to assess the role of an IgA/G-deamidated gliadin peptide (DGP) based point of care test (POCT), Simtomax, in predicting histological remission in CD.

Methods: We prospectively recruited patients with known CD attending for a gastroscopy with duodenal biopsy for the assessment of disease remission. All patients underwent a blood test for IgA-endomysial antibodies (EMA), IgA-tissue transglutaminase antibodies (TTG), total IgA levels and Simtomax at the point of endoscopy. They also completed a validated GFD adherence questionnaire (Biagi) which gives a 5 point score (0-4), with the highest score indicating strict adherence to a GFD. Patients with an adherence score of 3 or 4 were considered to follow a strict GFD. A gastroscopy was then performed with quadrantic biopsies taken from the second part of the duodenum and one biopsy taken from the duodenal bulb. We compared all surrogate markers to the gold standard of duodenal histology.

Results: 145 (74% female, median age 53) patients with CD on a GFD were recruited from 2013-2015. 52 (36%) patients had persistent villous atrophy. Simtomax was the most sensitive in predicting villous atrophy (78.8%). The sensitivities of EMA, TTG and the GFD adherence score were significantly lower than that of Simtomax. Simtomax had the best negative predictive value (NPV) for villous atrophy at 82.5%.

Surrogate marker	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)
Simtomax	78.8 (78.5-79.2)	55.9 (55.6-56.2)	50 (49.7-50.3)	82.5 (82.2-82.8)
TTG	51.9 (51.5-52.4)	80.6 (80.4-80.9)	60 (59.5-60.5)	75 (74.7-75.2)
EMA	36.5 (36.1-37.0)	83.9 (83.6-84.1)	55.9 (55.3-56.4)	70.3 (70.0-70.5)
Adherence score	23.1 (22.7-23.4)	82.8 (82.6-83.0)	42.9 (42.3-43.4)	65.8 (65.5-66.1)

Conclusion: Simtomax exceeds all other available surrogate markers in predicting the presence of villous atrophy. Simtomax could be used to aid informed decision making in patients who require but are reluctant to undertake a gastroscopy for duodenal biopsy to assess for disease remission. It could also act as a useful adjunct to identify patients who may require further dietetic support.

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