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Is serology predictive of persisting villous atrophy in patients with established Coeliac Disease (CD)?

Introduction:

Recent work has suggested that an IgA-tissue transglutaminase (IgA tTG) <1.2 U/mL may predict mucosal healing in those with established CD. This study examines whether the combination of serological markers may be used as a surrogate marker for the detection of villous atrophy (VA) in known CD patients.

Methods:

We undertook a prospective analysis of known Coeliac disease (CD) patients diagnosed in a University hospital. All patients underwent a gastroscopy, with four biopsies taken from the second part of the duodenum, and one from the duodenal bulb. Serological markers were assessed at the time of endoscopy (IgA tTG, IgA-endomysial antibodies (IgA-EMA), IgA-antigliadin antibody (IgA AGA) and IgG-anti-gliadin antibody (IgG AGA), and their performances in isolation and in combination compared to histological outcomes.

Results:

107 patients (67.3% female, median age 53 years (20-81 years)) that were on a gluten-free diet for a median duration of 6 years were included. The performance of the different serological markers to detect VA, both in isolation and in combination are shown in Table 1. The performance of TTG using the previously used cutoff of <1.2u/ml produced a sensitivity of 38.5%, a specificity of 73.8%, a positive predictive value of 64.9% and a negative predictive value of 43.7% to detect VA.

Table 1 - Ability of serological markers to detect VA

	Sensitivity	Specificity	Positive Predictive value	Negative Predictive Value
tTG	39.0%	97.1%	88.9%	70.8%
EMA	40.5%	78.8%	89.5%	71.6%
IgA AGA	47.5%	95.5%	86.3%	75.3%
IgG AGA	37.5%	90.0%	68.2%	71.6%
EMA + tTG	33.3%	1.54%	93.3%	30.4%
IgA AGA + IgG AGA	28.6%	100%	100%	68.4%
IgA or IgG + EMA	28.6%	100%	100%	68.4%
IgA or IgG + tTG	31.0%	100%	100%	69.1%

Conclusions:

This study is the first study to evaluate the combination of serological markers to detect VA in patients with established CD. Our findings oppose recent work that serology may be used as a surrogate marker of mucosal healing in known CD.