

**Title:** Alarm symptoms indicate more severe celiac disease at the time of diagnosis, but long-term prognosis is good

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**Abstract**

The possibility of non-biopsy diagnosis of celiac disease (CeD) in adults is increasingly debated. It would be important to obtain more information on clinical findings that still necessitate endoscopic investigations. We investigated the prevalence of alarm symptoms at CeD diagnosis and their long-term significance.

Comprehensive medical data of 814 patients at CeD diagnosis and after median of 9.7 years on a gluten-free diet (GFD) were collected. For the analyses, patients were further divided into those presenting with (45%) and without (55%) alarm symptoms at diagnosis.

Anemia and unintentional weight loss comprised 95% of all alarm symptoms, whereas rectal bleeding, repeated vomiting and dysphagia were rare and atypical to CeD. Patients with alarm symptoms were significantly more often women (83% vs 71%,  $p<0.001$ ) and had more often severe symptoms (41% vs 2%,  $p<0.001$ ) and subtotal or total villous atrophy (72% vs 57%,  $p<0.001$ ) than those without alarm symptoms. At follow-up, patients with alarm symptoms were more often asymptomatic (77% vs 71%,  $p=0.035$ ) and had significantly more often osteopenia or osteoporosis (15% vs 9%,  $p=0.008$ ), whereas the groups did not differ in the presence of fractures (30% vs 26%,  $p=0.248$ ), malignancies (3% vs 4%,  $p=0.741$ ) or quality of life (data not shown).

Alarm symptoms were common particularly in women with CeD and predicted more advanced CeD at diagnosis. However, except for osteopenia/osteoporosis, patients with alarm symptoms did not show reduced long-term outcomes on GFD. Rectal bleeding, vomiting and dysphagia are not typical symptoms of CeD and demand special caution.