A Retrospective Analysis of the Natural Long-Term History of Untreated Celiac Disease

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Background.

Celiac disease (CD) is one of the most common lifelong disorders in the US. However the prevalence trend of untreated CD and its natural history over time are still unclear. We investigated a cohort first tested in 1974 and then followed up to 2007.

Patients. The Odyssey cohort includes adults resident in Maryland that participated in both CLUE I (1974) and CLUE II (1989) studies and then followed on by periodical clinical questionnaire. We analyzed 3511 paired sera samples from Odyssey cohort. CD prevalence in 1974/1989 was compared with that observed in a sample of 2845 healthy adults screened in our laboratory between 1996 and 2001 by serological antiendomysial antibody (EMA) testing.

Methods. Sera were first tested for IgA anti-transglutaminase (tTG) antibodies and those with elevated anti-tTG were subsequently tested for serum IgA EMA. CD was defined as cases in which both anti-tTG and EMA were positive.

Results. Overall we analyzed samples from 7896 subjects, 4354 from CLUE I and 3542 from CLUE II. The CLUE I group had 9 positive Anti-tTG and EMA samples out of 4354 samples screened (1:484), while the CLUE II group had 14 positive Anti-tTG and EMA samples out of 3542 samples (1:253). The prevalence of CD in the Odyssey cohort was 0.21 % (95 % CI = 0.072 - 0.34) in 1974 and 0.45 % (95 % CI = 0.24 – 0.66) in 1989. In the year 2000 American sample the prevalence of CD was 0.95 % (95 % CI 0.59 – 1.3%) Compared to controls, untreated CD subjects showed higher incidence of osteoporosis and associated autoimmune disorders.

Conclusions. There has been a significant increase of CD prevalence in the US during these last 3 decades, a trend that was associated to higher co-morbidity in undiagnosed patients.