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PREVALENCE OF CELIAC DISEASE (CD) IN SUBJECTS WITH DYSPEPTIC SYMPTOMS. A CASE-CONTROL STUDY.

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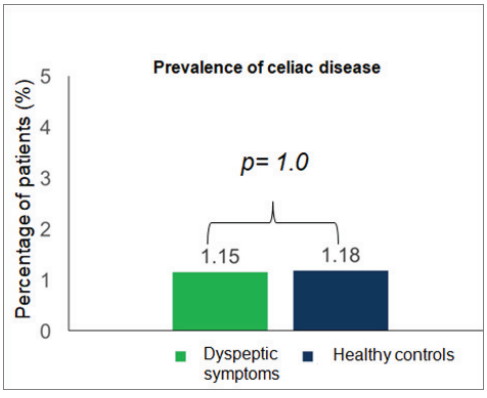
Background: Celiac disease (CD) is an autoimmune enteropathy that occurs in genetically susceptible individuals and the clinical manifestations are variable. Dyspeptic symptoms (nausea, early satiety, postprandial fullness, epigastric pain / discomfort) are highly prevalent in the general population and may be present in the absence of organic diseases (functional dyspepsia) or in disorders such as peptic ulcer, neoplasm's or even CD. Some studies indicate that 0.5-2.0% of patients with dyspepsia may actually have CD, however, these results are controversial. **Aim:** To evaluate the prevalence of CD in a group of subjects with dyspeptic symptoms and compare it with a control group in a Mexican population. **Material and Methods:** We performed a prospective study of cases and controls in subjects who went to a state blood transfusion center to voluntarily donate blood between Feb-May 2018. These subjects underwent a routine evaluation (physical examination), blood count, liver function tests) and those who were considered "healthy donors" prior to the donation were administered the PAGI-SYM. If a subject had at least 1 symptom in the PAGI-SYM questionnaire was considered as a subject with dyspeptic symptoms (Group 1), and those without symptoms were classified as healthy controls (Group 2). In all subjects and anti-tissue transglutaminase IgA 2 (IgA-tTG2) was determined and IgG antibodies against the deaminated gliadin peptide (IgG-DGP), (Testline Clinical Diagnostics). The presence of CD was considered if the patients had at least 1 of the positive antibodies (> 20 IU/mL). In all positive cases, a duodenal biopsy was performed to confirm CD diagnosis. **Results:** A total of 427 subjects (326 men, 101 women) with an mean age of 34 years (range 18-65) were evaluated. Of these, 87 subjects (63% men, 37% women) had symptoms of dyspepsia (Group 1) and 340 were asymptomatic (Group 2). In group 1 there was a higher proportion of women (37% vs. 20%, p = 0.001) compared to group 2. The most frequent dyspeptic symptoms were: postprandial fullness (52%) and early satiety (46%), followed by discomfort (35%), epigastric pain (28%), nausea (25%), weight loss (20%), bowing (14%) and vomiting 6%. The prevalence of CD in group 1 was 1.15% (1/87, 95% CI 0.2-6%) while in group 2 it was 1.18% (4/340, 95% CI 0.4-2.9%, p = 1,000, Figure) **Conclusions:** In our study, the prevalence of CD in Mexican subjects with dyspeptic symptoms were not different from the control population. These findings are similar to those reported in other countries. Therefore, based on our results, the search for CD in patients with dyspeptic symptoms in Mexico would not be justified.



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INCIDENCE OF CELIAC DISEASE IS INCREASING OVER TIME: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Celiac disease is a common autoimmune condition estimated to affect approximately 1% of the population. We sought to understand the incidence of celiac disease in various regions of the world, as well as if and how this has changed over time. **Methods:** We performed a systematic literature search in MEDLINE and EMBASE up to and including July 19, 2018, to identify all population-based studies reporting the incidence of diagnosed celiac disease. Studies comprised of at-risk populations (e.g., patients with type 1 diabetes) were excluded. Studies that reported the incidence of celiac disease in children (e.g., those aged ≤15 years) and/or adults (e.g., those aged ≥18 years), however, were still included. We performed temporal trend analyses to capture the average annual percent change (AAPC) in celiac disease incidence over time. Meta-analyses were performed to determine sex and age differences in diagnosed celiac disease incidence, as well as temporal trends. Heterogeneity was assessed using the I^2 statistic. **Results:** Out of 10,226 citations, we identified 82 eligible studies for inclusion, of which 46 were deemed suitable for analyses. Studies analyzed were primarily based in Europe (n = 38), with the remainder taking place in North America (n = 7) and Oceania (n = 1). Overall incidence of celiac disease was assessed in 19 studies, while 19 focused exclusively on children, and 8 focused exclusively on adults. In the 21st century, the pooled female incidence of celiac disease was 17.4 (95% CI: 13.7, 21.0) per 100,000 person-years, compared to 7.8 (95% CI: 6.3, 9.3) in males. Child-specific incidence was 20.1 per 100,000 person-years (95% CI: 16.0, 24.3) compared 13.2 (95% CI: 8.6, 17.8) in adults. Incidence of celiac disease appeared to be relatively low and stable until the 1990s, wherein diagnoses started to substantially increase annually at 9.2% (95% CI: 6.2, 12.2) per year (Figures 1 and 2). **Conclusion:** The incidence of diagnosed celiac disease has been significantly rising among all age groups over the last few decades in many industrialized nations. Diagnoses of celiac disease continue to disproportionately affect females and children, respectively. Population-based studies should be performed in Africa, Asia, and South America to provide a comprehensive picture in the global epidemiology of celiac disease diagnosis rates.

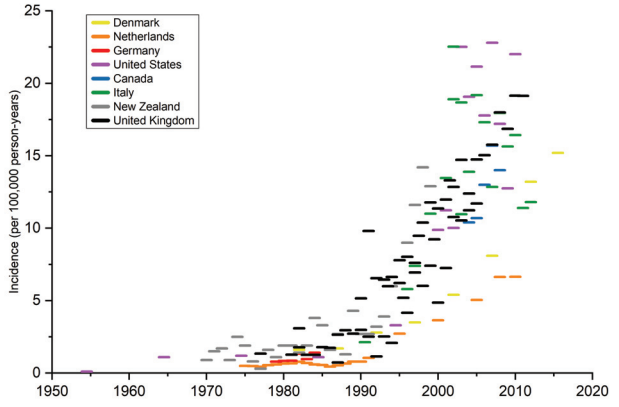

Figure 1: Trends in the incidence of celiac disease over time, by country

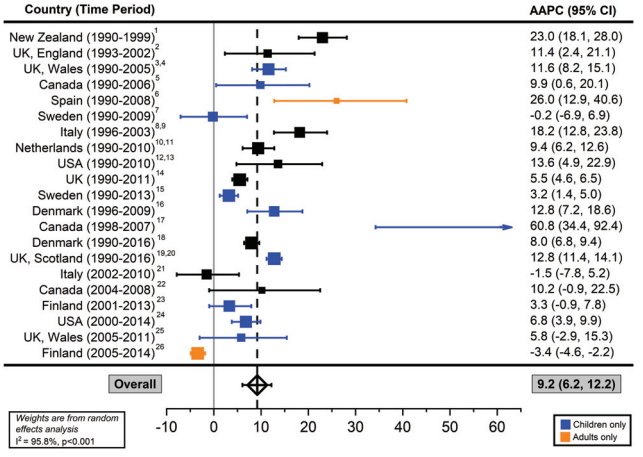

Figure 2: Meta-analysis of the AAPC in celiac disease incidence (1990-2016) 1. Cook 2004 2. Fowell 2006 3. Hawkes 2000 4. Hurley 2012 5. McGowan 2009 6. Fernandez 2010 7. Namatovu 2014 8. Lanzarotto 2004 9. Lanzini 2005 10. Jansen 1993 11. Burger 2014 12. Murray 2003 13. Ludvigsson 2013 14. West 2014 15. Tapsas 2015 16. Dydensborg 2012 17. Rajani 2010 18. Grode 2018 19. White 2013 20. Lister 2018 21. Angeli 2012 22. Stewart 2011 23. Kivela 2015 24. Almallouhi 2017 25. Whyte 2013 26. Virta 2017

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EPIDEMIOLOGY OF PATIENTS ADMITTED FOR CELIAC DISEASE

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Introduction: Celiac disease (CD) is a disease that predominantly affects Caucasians. Immune-mediated reactivity in response to gluten exposure (i.e. wheat) is the pathophysiologic cornerstone of CD. With ever-changing demographic diversity in the US and exposure of all ethnic groups to somewhat similar dietary factors, the prevalence and inpatient outcomes of patients with CD remains to be studied. The aim of this study was to assess inpatient prevalence, morbidity and inpatient economic burden of CD in the US in the past decade. **Methods:** This is an observational retrospective cohort study using the National Inpatient Sample 2007 to 2016, the largest publically available inpatient database in the US. All patients with CD diagnosis were included using ICD9-10CM codes. No patients were excluded. The primary outcome was determining the inpatient prevalence of CD in the past decade. Secondary outcomes included determining the most common reasons for gastrointestinal (GI) admission, inpatient mortality, morbidity, length of hospital stay (LOS), total hospital charges and costs, the latter of which was adjusted for inflation using the Consumer Price Index. Multivariate analysis was used to adjust for age, gender, income in patients' zip code, Charlson Comorbidity Index, hospital region, location, size and teaching status. **Results:** A total of 337,201 patients with CD were identified. The mean age was 55.3 years; 71% were female. The inpatient prevalence of CD in the US increased from 2007 (52/100,000 admissions) to 2016 (117/100,000 admissions). All outcomes are displayed in Table 1. The most common GI reasons for admission were acute pancreatitis, small bowel obstruction, diverticular disease, *C. difficile* infection and GI bleed. On multivariate analysis, additional hospital costs, and charges in 2016 increased with adjusted means of $914 (p= 0.02), and $13,087 (p<0.01) respectively when compared to 2007, while length of stay decreased by 0.5 days from 2007-2016 (p<0.01). For secondary outcomes, the odds of