

# **The prevalence of coeliac disease among Emirati patients with type 1 diabetes: data from a large diabetes centre in the United Arab Emirates (UAE)**

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## **Introduction**

Coeliac disease is more common in patients with type 1 diabetes mellitus than in the general population. There is no published data available regarding the prevalence of celiac disease amongst individuals with T1DM in the United Arab Emirates(UAE).

## **Aims**

To estimate the prevalence of coeliac disease in Emirati people with type 1 diabetes.

## **Methods**

We examined data for all UAE Nationals with a clinical diagnosis of type 1 diabetes reviewed at ICLDC (n=2510). All individuals in whom celiac disease screening was performed using anti-tissue transglutaminase (anti-TTG) antibody and IgA titer were included in analysis (n=802). Anti-TTG antibody was considered positive at titer  $\geq 20$  AU/mL, anti-glutamic acid decarboxylase antibodies (anti-GAD) and anti-islet antigen 2 antibodies(anti-IA2) were considered positive at titers  $\geq 10$  IU/mL.

## **Results**

91 participants were anti-TTG positive by our criteria, while a further 15 participants who were anti-TTG negative had evidence of IgA deficiency; in total, 106 of 802 (13.2%) of individuals screened (4.2% of all Emirati Nationals diagnosed with type 1 diabetes) showed evidence of possible celiac disease.

Anti-IA2 antibody titer was available in 779 participants, while anti-GAD antibody was available in 788 participants. Neither anti-IA2 positivity (chi squared 0.25,  $p=0.61$ ) nor anti-GAD positivity (chi squared  $<0.001$ ,  $p=0.98$ ) was significantly associated with possible celiac disease in this patient group.

No participant with possible celiac disease had evidence of hypocalcaemia, defined as corrected serum calcium  $< 2.1$  mmol/L. 63 of 106 (59.4%) individuals with possible coeliac disease had evidence of iron deficiency, defined as hemoglobin  $< 120$  g/L in females and  $< 140$  g/L in males in combination of MCV  $< 80$  fL. However, microcytic anemia was

common in this group (435 of 802, 54.2%) and was not significantly associated with evidence of possible celiac disease (chi squared 1.10,  $p=0.29$ ).

## **Discussion**

The prevalence of either anti-TTG positivity or IgA deficiency suggestive of possible coeliac disease in Emirati people with type 1 diabetes is between 4.2 and 13.2%. Although we did not have access to definitive diagnostic testing, anti-TTG antibodies are highly specific for coeliac disease and hence these represent reasonable estimates for the lower bounds of prevalence. We were not able to establish associations between anti-TTG positivity and evidence of malabsorption in this population. Our data supports the need for screening for coeliac disease among Emirati patients with type 1 diabetes.