

Immune reaction to food antigens in Graves' disease (GD) patients: role of gliadin and other food antigens

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As known, an imbalance of the gut microbiota is associated with a higher risk for autoimmune diseases. Moreover the increased rates of autoimmunity reported in urban residential areas worldwide suggest a possible influence of diet. We report on the antibody response to food antigens in GD patients. Since 10% of celiac patients develop an autoimmune thyreopathy we focused on gliadin (DGP), transglutaminases (tTG) and 40 other food antigens (FA). Commercially available ELISA assays were performed according to the manufacturer's instructions. 105 and 108 sera from 5 European endocrine centres have been tested for IgG and IgA to tTG and DGP. Results have been compared to epidemiological data. 71 sera have also been tested for IgG to FA and compared to 25 healthy controls. 6 out of 105 sera (5.7%) showed positive tTG; 16 and 7 out of 108 (15 and 6.5%) positive DGP-IgA and IgG, respectively; a higher prevalence compared to the worldwide prevalence of celiac disease (1%) (chi-squared test; p-value < 0.001). Prevalence of smokers and ocular involvement was not higher in patients with positive sera compared to negative. 23 out of 71 (32.3%) GD sera showed sensitivity against a food antigens, compared to 25% (6 out of 24) positive results among healthy controls (chi-squared test; P-value=0.4). Interestingly, some antigens (cow's milk, egg white, wheat, yeast) are more frequently positive than others. The distribution of antibodies against TSH receptor (TRAb) values was not different in positive or negative sera. In conclusion, the prevalence of positive tTG antibodies is higher in GD patients than worldwide. Even though autoantibodies to DGP and tTG were equally distributed between all 5 centres we observed the highest percentage of positive responses to other food antigens in Cardiff, suggesting that diet may contribute to the increased sensitivity. More studies are needed to confirm these data.

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