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# Thyro-entero-gastric autoimmunity: Pathophysiology and implications for patient management

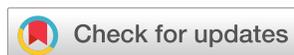
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The association between autoimmune atrophic gastritis and thyroid disorders has been observed since the early 1960s and the expression “thyrogastric syndrome” was coined to indicate the presence of thyroid autoantibodies or autoimmune thyroid disease in patients with pernicious anemia, a late clinical stage of autoimmune atrophic gastritis. More recently, it was confirmed that autoimmune thyroid disorders, in particular Hashimoto's thyroiditis, may be frequently associated with other organ-specific, immune-mediated disorders, such as autoimmune atrophic gastritis or celiac disease. The association of Hashimoto's thyroiditis with autoimmune atrophic gastritis or celiac disease in adult patients is currently considered part of the polyglandular autoimmune syndromes which include several autoimmune disorders associated with an autoaggressive impairment of endocrine glands. From a clinical point of view, the thyro-entero-gastric autoimmunity may lead to potentially serious consequences like anemia, micronutrients deficiencies, and drugs malabsorption, as well as to an increased risk for malignancies. These alterations may frequently present in an underhand manner, with consequent diagnostic and treatment delays. Many aspects of the association between thyroid, gastric and intestinal autoimmune diseases still await clarification. The present review focuses on the embryological, genetic and pathophysiological aspects of thyro-entero-gastric autoimmunity. In particular, the current diagnostic criteria of autoimmune thyroid disease, autoimmune atrophic gastritis, and celiac disease are reviewed, along with the evidences for their association in poly-autoimmunity syndromes. The benefits of proactive screening of autoimmune thyroid disorders in patients with autoimmune gastritis or enteropathy and viceversa are also discussed.

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## Keywords

autoimmune atrophic gastritis; autoimmune thyroiditis; celiac disease; pernicious anemia; polyglandular autoimmune syndrome

## Abbreviations

AAG, autoimmune atrophic gastritis; ATD, autoimmune thyroid disease; CD, celiac disease; EATL, enteropathy-associated T-cell lymphoma; GI, gastrointestinal; GFD, gluten-free diet; HT, Hashimoto's thyroiditis; HLA, human leukocyte antigen; IEL, intraepithelial lymphocytes; NET, neuroendocrine tumor; PA, pernicious anemia; PAS, polyglandular autoimmune syndromes; RCD-II, refractory CD type-II; SBA, small bowel adenocarcinoma

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