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Commentary

See the original article by Kalbasi et al (J Parathyr Dis. 2023;11:e11233)

Propylthiouracil-induced ANCA-positive vasculitis in Graves' disease

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Implication for health policy/practice/research/medical education:
Anti-neutrophil cytoplasmic antibodies (ANCA)-associated vasculitis is an infrequent autoimmune disease that involves small vessels. Vasculitis triggers include infections, drugs, and chemicals. Propylthiouracil (PTU) is the most reported drug implicated in the induction of ANCA-associated vasculitis. The involvement of hematological systems, skin, gastrointestinal systems, kidneys, musculoskeletal systems, lungs, and neurological systems are seen in PTU-induced vasculitis. The exact pathogenesis of ANCA induction and PTU-induced vasculitis is not fully understood. Diagnosing PTU-induced ANCA-positive vasculitis involves a combination of clinical, laboratory, imaging, and histopathological findings.

Keywords: Propylthiouracil, Vasculitis, ANCA-positive vasculitis, Antineutrophil cytoplasmic antibodies
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I recently read the paper by Kalbasi et al (1), titled "Propylthiouracil induced ANCA-positive vasculitis in a patient with Graves' disease; a case report," with great interest. Regarding this study, I would like to expand the discussion with more recent data on this topic.

ANCA-associated vasculitis refers to a group of autoimmune diseases characterized by inflammation of blood vessels due to the presence of ant-neutrophil cytoplasmic antibodies (ANCA). This disease can become severe if left untreated (2).

Propylthiouracil (PTU) is the most reported drug implicated in the induction of ANCA-associated vasculitis, usually p-ANCA. PTU-stimulated ANCA-positive vasculitis is a rare side effect of this agent for treating Graves' disease (3).

The long-term outcomes of patients with PTU-induced ANCA-associated vasculitis are not clear well. However, clinically obvious vasculitis can resolve following discontinuing the drug (4).

Diagnosing PTU-induced ANCA-positive vasculitis involves a combination of clinical, laboratory, and imaging findings. The diagnosis of ANCA-associated vasculitis is based on the presence of clinical features such as fever, weight loss, and organ involvement, along with laboratory findings such as elevated inflammatory markers and the presence of ANCA. ANCA testing is an essential diagnostic tool for ANCA-associated vasculitis. PTU-induced vasculitis is usually ANCA-positive, more often with anti-MPO antibodies and the consequent p-ANCA pattern (3). Imaging studies such as computed tomography (CT) and bronchoscopy may be used to evaluate the extent of organ involvement in PTU-induced vasculitis. A biopsy of affected tissue may be necessary to confirm the diagnosis of vasculitis. Differential diagnosis should be made with other autoimmune diseases, infections, and malignancies (5).

The specific risk factors for developing PTU-induced ANCA-positive vasculitis are the duration of PTU treatment since a longer duration of PTU treatment may increase the risk of developing ANCA-associated vasculitis (6).

Conclusion

The prognosis of PTU-induced ANCA-positive vasculitis can vary depending on various factors, including the severity of the disease, the extent of organ involvement, and the promptness of diagnosis and treatment. Rapid withdrawal of the offending medication and treatment with immunosuppressive agents may be necessary to control inflammation and prevent further organ damage. The prognosis may be worse in patients with severe organ involvement.

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Conflicts of interest
The author declares that she has no competing interests.

Ethical issues
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References
1. Kalbasi S, Tajik A, Ahmadi S, Khodabandeh H, Zare N, Bashirynejad M. Propylthiouracil induced ANCA-positive vasculitis in a patient with Graves' disease; a case report. J Parathyr Dis. 2023;11:e11233. doi:10.34172/jpd.2023.11233.
2. Yates M, Watts R. ANCA-associated vasculitis. Clin Med (Lond). 2017;17:60-64. doi: 10.7861/clinmedicine.17-1-60.
3. Tomkins M, Tudor RM, Smith D, Agha A. Propylthiouracil-induced antineutrophil cytoplasmic antibody-associated vasculitis and agranulocytosis in a patient with Graves' disease. Endocrinol Diabetes Metab Case Rep. 2020;2020:19-0135. doi: 10.1530/EDM-19-0135.
4. Tota M, Baron V, Musial K, Derrough B, Konieczny A, Krajewska M, et al. Secondary IgA nephropathy and IgA-associated nephropathy: a systematic review of case reports. Journal of Clinical Medicine. 2023; 12:2726. doi:10.3390/jcm12072726.
5. Chen B, Yang X, Sun S, Guo W, Li X, Zhang L, et al. Propylthiouracil-Induced Vasculitis With Alveolar Hemorrhage Confirmed by Clinical, Laboratory, Computed Tomography, and Bronchoscopy Findings: A Case Report and Literature Review. Iran Red Crescent Med J. 2016;18:e23320. doi: 10.5812/ircmj.23320.
6. Chen YX, Zhang W, Chen XN, Ni LY, Shen PY, Wang WM, et al. Clinical analysis of ANCA-associated renal vasculitis patients with chronic dialysis. Clin Exp Rheumatol. 2014;32:S5-10.