Management of Thyrotoxicosis with Chronic Neutropenia

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The new patient with Thyrotoxicosis and neutropenia is not uncommon and requires focussed deliberations on avoidance of iatrogenic neutropenic injury and raises a clinical dilemma when treating patients with pre-existing neutropenia.
There is a paucity of published experience on the safety of Carbimazole and Propylthiouracil in defined neutropenic. Thyrotoxic patient's preparation for definitive ablative RAI therapy or thyroidectomy.

53 year old female was referred for an urgent endocrine review with a diagnosis of thyrotoxicosis. The presenting symptoms developing over the few months included palpitations, lethargy and 6kg weight loss.
She had a longstanding chronic neutropenia, documented as a cyclical neutropenia under regular Haematology review and was on long term Penicillin- V.
She had had a very low frequency of septic episodes in the past.
The laboratory presentation: Haemoglobin 136, white blood cell count 2.3, neutrophils 0.4, FT4 74.1; TSH 0.01, elevated TPO and normal TSH receptor antibody
The anti-thyroid drugs considered Propylthiouracil and Carbimazole and known associated risk of neutropenia; often idiosyncratic required a multidisciplinary team focus and discussion with Haematology, Nuclear medicine and Endocrinology.
The preferred treatment option was radioactive iodine thyroid ablation after restoring euthyroidism with brief, closely monitored Carbimazole and Propranolol therapy.

The patient was informed in detail about potential issues and dilemmas in her management and consented to treatment. Regular blood tests revealed a stable neutrophil count; she remained well throughout her treatment with a persistently low neutrophil count.
She had a single ablative Radioiodine therapy dose and remains well with a stable neutropenia on Thyroxine replacement.

This case highlights the importance and potential dilemmas and the need to individualise the management in cases of patients with Thyrotoxicosis who present with thyrotoxicosis and neutropenia (ethnic variant, benign, immunosuppression or autoimmune).

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