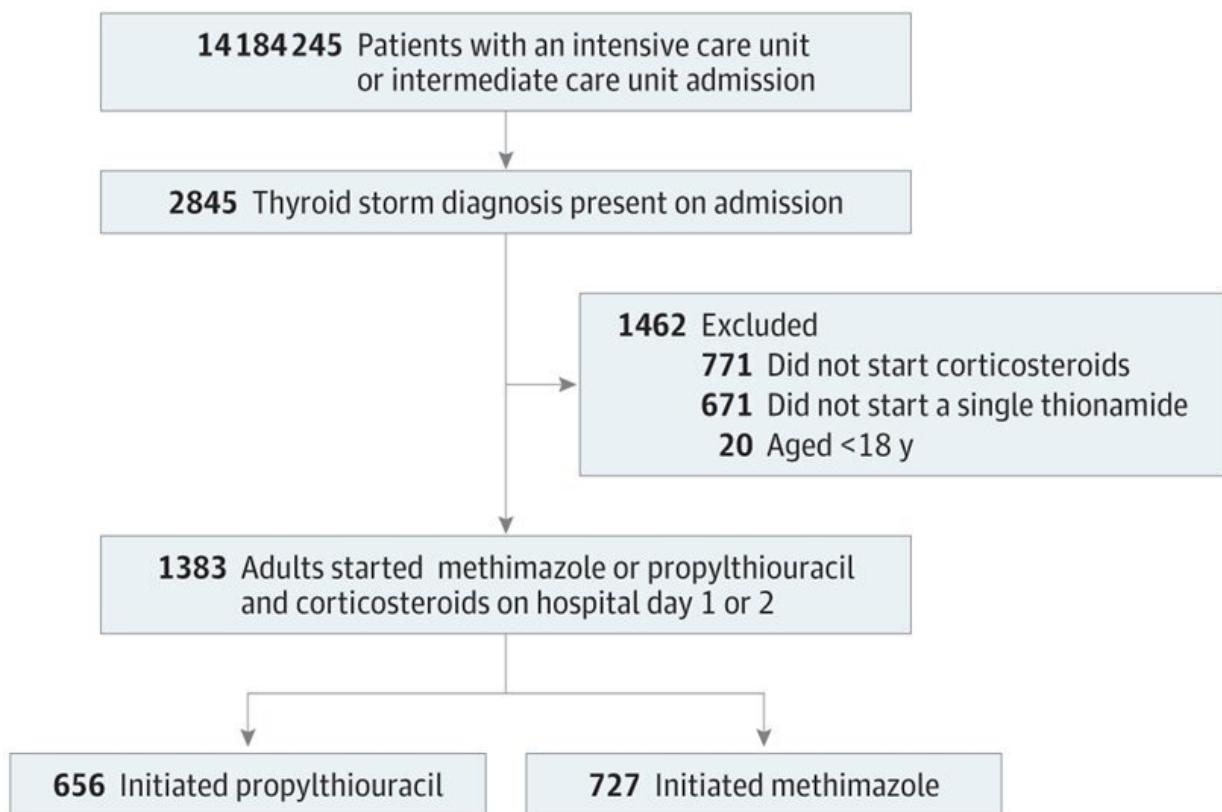


Study: No significant differences in mortality, adverse events in patients taking thyroid medications

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Flow Diagram for Inclusion and Exclusion of Patients. Credit: *JAMA Network Open* (2023). DOI: 10.1001/jamanetworkopen.2023.8655

A thyroid storm is characterized by high-circulating thyroid hormones

(severe hyperthyroidism) that leads to life-threatening acute end-organ damage, including neurologic dysfunction, cardiogenic shock, hepatic failure, cardiac arrhythmias, and high mortality.

Current treatment guidelines recommend using the [thyroid](#) drug propylthiouracil (PTU) over another thyroid drug methimazole (MMI) for this condition. However, a new study from Boston University Chobanian & Avedisian School of Medicine has found no significant difference in [mortality](#) in patients treated with either drug.

"We found no differences in the composite of hospital mortality or discharge to hospice, hospital mortality alone, duration of organ support, or total hospitalization costs and only a small decrease in thionamide-specific costs. These results suggest that PTU and MMI can be used interchangeably in the management of thyroid storm," explained first author Sun Young Lee, MD, MSc, assistant professor of medicine.

The current American Thyroid Association guideline recommends using PTU as the first-line therapy for treatment of thyroid storm because it is thought to inhibit conversion of thyroid hormone into a more active form in peripheral blood. On the other hand, the Japanese Thyroid Association guideline recommends using either PTU or MMI because a study done in Japan showed no significant differences in outcomes using either medication.

Because thyroid storm is a rare condition and is difficult to study in a large group of patients, the researchers utilized a national database of hospitalization data to compare effectiveness of the two drugs. Based on the initial thyroid medication received, patients were divided into either the PTU group or MMI group. The mortality of two groups were compared and no significant differences between the two groups was found.

The researchers hope that this finding leads to further evaluation of current recommendations and broadening of options for treatment of thyroid storm.

These findings appear online in *JAMA Network Open*.

More information: Sun Y. Lee et al, Comparison of Propylthiouracil vs Methimazole for Thyroid Storm in Critically Ill Patients, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2023.8655](https://doi.org/10.1001/jamanetworkopen.2023.8655)

Provided by Boston University School of Medicine

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