

## Is Japanese Thyroid Association (JTA) thyroid storm score or Burch Wartofsky scale (BWS) better in predicting clinical outcomes in hospitalized thyrotoxicosis patients?

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**Background:** Thyroid storm (TS) is a life-threatening endocrine emergency. Diagnosis of thyroid storm remains challenging despite the aid of two diagnostic criteria.

**Objectives:** Our objectives were to compare the clinical outcomes of all hospitalized thyrotoxicosis patients using the Burch-Wartofsky scores (BWS) and Japanese Thyroid Association Thyroid Storm (JTATS) criteria.

**Materials and Methods:** This was a non-interventional, retrospective and cross-sectional cohort study of 3-year period at two tertiary hospitals involving patients clinically diagnosed Thyroid storm (TS) and thyrotoxicosis non-storm (TNT).

**Results:** Twenty-six TS and 165 TNT patients were identified. The mean age of TS was  $42.45 \pm 13.93$  years old and comparable with the TNT group. Both groups were predominantly female (69.2% in TS, and 68.2% in TNT) and Malay ethnicity (73.1% in TS and 66.7% in TNT). TS was the first clinical presentation in 7 patients (26.9%). Patients of TS had higher frequency of atrial fibrillation, higher temperature, and pulse rate and lower Glasgow coma scale (GCS) score compared to TNT patients. TS patients had greater in-patient mortality, intensive care unit admissions, and ventilation requirements than TNT patients. The mortality rate in TS patients was 46.2%. Both  $BWS \geq 45$  and JTATS1 captured almost all TS patients. Among the TNT patients,  $BWS \geq 45$  had more adverse clinical outcomes compared with BWS 25-44 while there was no difference between JTATS1 and JTATS2. No independent factors predicting mortality though multiple factors were recognized.

**Conclusions:** Using either BWS or JTATS criteria able to diagnose and manage TS appropriately. There is no difference in clinical outcomes between either criteria.