

RESULTS

A total of 3,151 requests and results were reviewed. The main indication for the test was for hypertension work-up (85%), followed by nonspecific indications (9.4%), adrenal mass work-up (4%), neuroblastoma (1%) and MEN syndromes (0.1%). Out of 3,151 results, 0.5% were reported as abnormal (with significant elevation in any catecholamine metabolites) and 8% borderline (with non-significant elevation). For screening of secondary causes of hypertension, only 0.3% was found to have abnormal results. Some interventions taken by the laboratory to improve laboratory test utilisation include continuous feedback to clinicians for nonspecific indications, and revision of laboratory policy which allows only specialists to order the test.

CONCLUSION

In our institution, only 0.5% of the urinary catecholamine results were reported abnormal, consistent with the rare nature of the related diseases. The very low percentage of abnormal results for screening of secondary causes of hypertension may indicate the need to review the test ordering practices among clinicians.

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Incidence, Mortality and Clinical Outcome of Patients Hospitalised for Thyrotoxicosis with and without Thyroid Storm in a Single Tertiary Hospital

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INTRODUCTION

Current evidence on the incidence and outcomes of patients with thyroid storm in Malaysia is limited. We determined the incidence of thyrotoxicosis with and without thyroid storm and clinical outcomes among hospitalised patients in a tertiary hospital during an 8-year period.

METHODOLOGY

A retrospective analysis of clinical characteristics, mortality, hospital length of stay and treatment of thyrotoxic patients with age more than 18 years old in a tertiary hospital with an endocrine service from 2000 to 2018 was performed. Electronic medical records were reviewed to obtain data on predisposing factors, associated conditions and treatment during hospitalisation.

RESULTS

A total of 249 hospitalised patients with thyrotoxicosis were included. Most were female (73.9%), with a mean age 48.23±0.154 years, and of Malay (26.1%), Chinese (13.7%) and Indian (3.2%) ethnicity. Only 19 (7.7%) were diagnosed with thyroid storm. Graves' disease (59.8%) was the most common cause of hyperthyroidism, and 15.7% of these hospitalised patient were admitted after one month of being diagnosed. Majority of the patients received carbimazole (81%), with a mean dosage of 20.7 mg OD (±0.77). Precipitating factors included a history of non-compliance to anti-thyroid medication (27.7%) and surgical procedure (10.8%). Mortality and mean length of stay for thyrotoxicosis with or without storm is 6% and 5.91 days (±0.356), respectively. The associated conditions that may have increased morbidity were found in many patients: these included atrial fibrillation (18.9%), acute heart failure (11.6%), acute respiratory failure (10%), acute coronary syndrome (8%), acute renal failure (4.8%), invasive ventilation (4.4%), diabetic ketoacidosis (3.6%), acute ischemic stroke (3.2%), cardiac arrest (2%), acute liver failure (1.8%), supraventricular tachycardia (1.2%), cardiogenic shock (1.2%), non-invasive positive pressure ventilation (1.2%), encephalopathy (1.2%), intracranial haemorrhage (1.2%), adrenal insufficiency (0.8%) and pulmonary embolism (0.4%).

CONCLUSION

Associated conditions were found to be frequent in hospitalized patient with thyrotoxicosis with or without thyroid storm. The small percentage of thyroid storm may reflect underreporting or under recognition.

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Favourable Outcomes of Lithium Carbonate in the Management of Concomitant Thyrotoxicosis and Acute Dengue-Induced Hepatitis and Neutropenia

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INTRODUCTION

Dengue is one of the most important arthropod-borne viral diseases in tropical countries. The liver is one of the most common organs affected, seen in approximately 60 to 90% of patients. It is an arduous task for clinicians to predict the clinical outcomes of dengue-induced hepatitis and neutropenia, particularly in the presence of concomitant thyrotoxicosis and the attendant risks of its

therapy. Lithium has been used as an adjuvant therapy in thyrotoxicosis because of its ability to inhibit thyroid secretion. This is a case report of thyrotoxicosis complicated by dengue-induced hepatitis and neutropenia successfully treated with lithium.

CASE 1: Thyroid storm triggered by dengue

A 24-year-old lady with Graves' disease presented with acute delirium on day 2 of fever. Laboratory tests included a positive dengue NS1 antigen, suppressed thyroid stimulating hormone (TSH) <0.008 mIU/L [normal value (NV), 0.55 to 4.78] and elevated free thyroxine (FT4) 118.46 pmol/L (NV 11.6 to 22.7). The diagnosis of thyroid storm was made based on delirium, fever, diarrhoea and rapid atrial fibrillation. Prompt treatment with propylthiouracil (PTU), propranolol, Lugol's iodine, intravenous hydrocortisone and appropriate dengue supportive care were instituted. However, on day 3 of fever, the absolute neutrophil count (ANC) plummeted to 0.3 (NV 2 to 7 x 10³/μL) and transaminases demonstrated an increasing trend. PTU was substituted with lithium 300 mg TDS and continued for 3 days. She recovered completely on day 6 of illness with normalized liver function tests and ANC.

CASE 2: Thyrotoxicosis with dengue

A 36-year-old lady with Graves' disease on PTU 300 mg OD presented with 5 days of fever, vomiting and bleeding tendency. She was clinically in a hyperthyroid state. Laboratory tests revealed positive dengue NS1 antigen and IgM, suppressed TSH (<0.01 mIU/L), borderline FT4 (21.3 pmol/L), low ANC (0.5 x 10³/μL), and elevated transaminases [ALT 213 U/L (NV 10 to 49) and AST 817 U/L (NV 0 to 34)]. She was started on intravenous N-acetylcysteine for the significant dengue-induced hepatitis. Lithium 300 mg BD was initiated instead of PTU/carbimazole for 3 days. Liver enzymes and ANC improved, and she recovered completely on day 8 of illness.

CONCLUSION

Lithium is an alternative option for thyrotoxicosis especially in the setting of dengue-induced hepatitis and neutropenia.

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Insulin Basalog is Associated with Low Glycemic Variability in Type 2 Diabetes Subjects

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INTRODUCTION

Basalog is a biosimilar insulin that has been proven to be safe and efficacious, with the added potential to reduce healthcare costs. Glycemic variability (GV) refers to oscillation in blood glucose throughout the day either due to hypoglycaemia or postprandial increments. Continuous glucose monitoring (CGMS) is a useful tool to measure GV. To date, there has been no study describing the glycemic variability of insulin Basalog in type 2 diabetes (T2D) patients.

OBJECTIVE

To describe the glycemic variability of T2D patients on insulin Basalog

METHODOLOGY

A total of 55 T2D patients were recruited in a single centre study. Basalog was added in patients with uncontrolled diabetes on oral hypoglycemic agents. CGMS was started at least 6 weeks following the addition of Basalog. GV was analysed using the EasyGV software that calculated mean blood glucose (MBG), SD, mean amplitude of glycemic excursions (MAGE), average daily risk ratio (ADRR), lability index (LI), J-Index, low blood glucose index (LBGI), high blood glucose index (HBGI), continuous overlapping net glycemic action (CONGA), mean of daily differences (MODD), glycemic risk assessment in diabetes equation (GRADE), mean glucose (M-value) and mean absolute glucose (MAG).

RESULTS

The parameters for glycemic variability were calculated as follows MBG 9.7±3.01, SD 2.6±1.00, MAGE 4.4±1.28, ADRR 24.4±13.94, LI 2.9±1.62, J-Index 52.8±34.23, LBGI 3.0±5.31, HBGI 10.8±10.2, CONGA 8.9±3.02, MODD 2.4±1.08, GRADE 9.0±7.26, M-Value 16.3±22.7 and MAG 1.5±0.42. The calculated coefficient of variation was 26.8%. The M-value showed 74.5% patients to have good control over their blood glucose. Majority of the patients had a low risk of glycemic variability: 72.7% based on LBGI, 65.5% based on HBGI and 41.8% from ADRR.

CONCLUSION

Basalog was demonstrated to have low glycemic variability with lower risk of hypoglycaemia and postprandial hyperglycaemia.