

## **1. Abstract:**

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### **1.1. Objective:**

Toxic multinodular goiter is one of the important causes for retrogradation of patients' health. For this reason, the purpose of this study is to identify the incidence of toxic multinodular in patients admitted to Sultan Qaboos University Hospital (SQUH) and to describe epidemiological, clinical, biochemical and radiological characteristics for toxic multinodular goiter patients.

### **1.2. Methods:**

A retrospective study was conducted among Omani patients and the collected data were searched for all patients who had abnormal thyroid function test and admitted to thyroid clinic at SQUH, it included patients age above 20 with abnormal thyroid scan or patients with goiter or symptoms of hyperthyroidism at time of clinical presentation. However, we excluded pregnant women, thyroid cancer patients, and those who present with hypothyroidism.

### **1.3. Results:**

A total of 66 patients were included base on the diagnosis of TMG on biochemical, thyroid ultrasound scan and thyroid uptake scan for 930 patients demonstrated in SQUH at specified duration. We discovered that the incidence rate of toxic multinodular goiter was 71 new cases per 1000 people done thyroid uptake scan. The male to female ratio was 1:12 with mean and median age 50 (SD  $\pm$  14.3), the disease was founded in females with (92.4%) of total patients. The most reported symptom was palpitations and the most sign was goiter and tenderness. The presence of thyroid nodules was founded in (97%) of patients with TMG. In thyroid scintigraphy, (50%) of a total of 66 patients were founded to have normal Tc-99 uptake. Thyroid hormones test showed that the majority of patients (51.5%) appeared with normal level of FT4 and (68.2%) had suppressed in their TSH level. In pathological findings, (79.5%) of 39 patients who done FNA were found to be benign with Bethesda II classifications. the managements offer to our patients was carbimazole with (47%), radioactive iodine treatment was given to (13.6%) of patients and surgery was proceed in (15.2%) of patients.

#### 1.4. Conclusions:

Toxic multinodular goiter is a common thyroid disorder in our environment, presenting with hyperthyroidism and neck swelling. Our study showed that TMG IS more common in females compared to males with palpitation as the most common clinical presentation followed by multiple nodules. The treatment offered to our patients was carbimazole as first line, while radiotherapy was the most common permanent cure. Surgery was performed in patients with huge neck swelling and obstructive symptoms.