

**LOWER URINARY TRACT SYMPTOMS IN FEMALE PATIENTS WITH HYPERTHYROIDISM**Hypothesis / aims of study

The aim was to investigate the lower urinary tract symptoms (LUTS) in female patients with hyperthyroidism.

Study design, materials and methods

Between July 2008 and December 2008, a consecutive 65 newly diagnosed and untreated female hyperthyroid patients were enrolled. The basic demographics, LUTS, urinary flow rates, voided volumes, hyperthyroid symptoms, and serum levels of free T4 and TSH were accessed at baseline and at month 3 of treatment. Another 62 age-matched healthy volunteers were collected for comparisons.

Results

The hyperthyroid women had a significantly higher symptom score of frequency ( $1.15 \pm 1.75$  vs  $0.31 \pm 1.05$ ,  $P=0.01$ ), Incomplete emptying ( $0.90 \pm 1.47$  vs  $0.29 \pm 1.12$ ,  $P=0.00$ ), straining ( $1.05 \pm 0.85$ ,  $0.27 \pm 0.51$ ,  $P<0.01$ ), voiding symptoms ( $3.05 \pm 3.28$  vs  $1.06 \pm 2.63$ ,  $P<0.01$ ), and total symptoms ( $5.88 \pm 6.17$  vs  $2.76 \pm 4.65$ ,  $P<0.01$ ). The mean peak flow rate was significantly lower in the hyperthyroid group ( $25.0 \pm 5.3$  vs  $28.6 \pm 6.1$  ml/s,  $P=0.02$ ). No association between LUTS and hyperthyroid parameters (symptoms, free T4, and TSH) was observed. Following treatment, the LUTS and flow rates significantly improved following treatment.

Interpretation of results

Hyperthyroidism is characterized by a variety of clinical presentations related to the imbalance of autonomous nervous system, with sympathetic activities prevailing over parasympathetic tones. As a consequence, voiding function may be impaired since normal bladder function requires a normal autonomous nervous system. Prior studies assessing voiding function in hyperthyroid patients are scarce and limited by small patient numbers. Our study demonstrates that the bladder function is impaired in hyperthyroid patients, as evidenced by a higher symptom score and lower peak flow rate.

Concluding message

Compared with healthy controls, hyperthyroid women have more severe storage and voiding symptoms. A lower mean peak flow rate suggests an impaired voiding function in these patients. Both LUTS and flow rates improve following treatment. In hyperthyroid population, the mechanism of impaired bladder function requires further investigation.

<b><i>Specify source of funding or grant</i></b>	<b>No</b>
<b><i>Is this a clinical trial?</i></b>	<b>No</b>
<b><i>What were the subjects in the study?</i></b>	<b>HUMAN</b>
<b><i>Was this study approved by an ethics committee?</i></b>	<b>Yes</b>
<b><i>Specify Name of Ethics Committee</i></b>	<b>Ethics Committee of National Taiwan University Hospital</b>
<b><i>Was the Declaration of Helsinki followed?</i></b>	<b>Yes</b>
<b><i>Was informed consent obtained from the patients?</i></b>	<b>Yes</b>