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Evaluation of the use of appropriate thyroid function tests

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ABSTRACT

Disorders of the thyroid gland are amongst the most common endocrine disorders. The diagnosis of thyroid disease consists of a history and clinical examination, followed by specific confirmatory investigations. These investigations are an important diagnostic component in thyroid disease and are amongst the most common investigations ordered in clinical laboratories. Although these tests are relatively inexpensive individually, they account for a disproportionately large amount of health care expenditure for diagnostic testing. Appropriate laboratory investigation is critical to establish the diagnosis and cause of thyroid disease in the most cost-effective way.

Discovery Health released a set of evidence-based guidelines in order to educate the clinician with regard to the selection of thyroid function tests. According to these guidelines a TSH (Thyroid Stimulating Hormone) test is the investigation of choice in suspected thyroid disease.

This study is a retrospective investigation that compares the difference in ordering patterns of laboratory investigations by clinicians before and after the publication of the guidelines. Two data sets were generated from the data bank of Discovery Health. The first data set (I) was based on records compiled before March 2003 whereas the second data set (II) was based on records compiled from April 2003. Following use of the exclusion and inclusion criteria the sample size totaled 73 850 cases. An analysis was made with regard to the requesting frequency of specific tests. This study will focus solely on the appropriateness of thyroid function tests ordered. It is beyond the scope of this study to attach a specific clinical diagnosis to the results.

The thyroid function tests requested before the publication of the evidence-based guidelines were often requested without careful thought and consideration on the part of the clinician. Some of the combination tests ordered (Free T3 and Free T4) are not advocated as an initial investigation in the evaluation of thyroid function and waste funds in this instance. The ordering of inappropriate thyroid function tests often leads to the depletion of funds available to a patient within the financial year.

The results revealed that after publication of the guidelines there was an increase in the requesting frequency of TSH as a first line investigation, as well as Free T4 while a decrease in requests for Free T3 was noted. The publication of evidence-based guidelines as a guide to requesting the correct thyroid function tests in order to diagnose suspected thyroid disease appears to have impacted in increasing awareness amongst clinicians with regard to the tests required to diagnose and monitor thyroid disease.