INADEQUATE INFORMATION ON REQUEST FORMS FOR THYROID FUNCTION TESTS MAY AFFECT PATHOLOGIST'S INTERPRETATIVE COMMENTS

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Sir,

We write on how inadequate information on the laboratory request forms can affect the interpretation of test results. Thyroid stimulating hormone (TSH), Thyroxine (T4), and Tri-iodothyronine (T3) are commonly requested for, when investigating thyroid disorders. Since diagnoses are often established by laboratory test results, we assessed some areas that can lead to misinterpretation of thyroid function tests. Tests for thyroid function were recently introduced in our centre and there is the need for chemical pathologists to add interpretative comments.

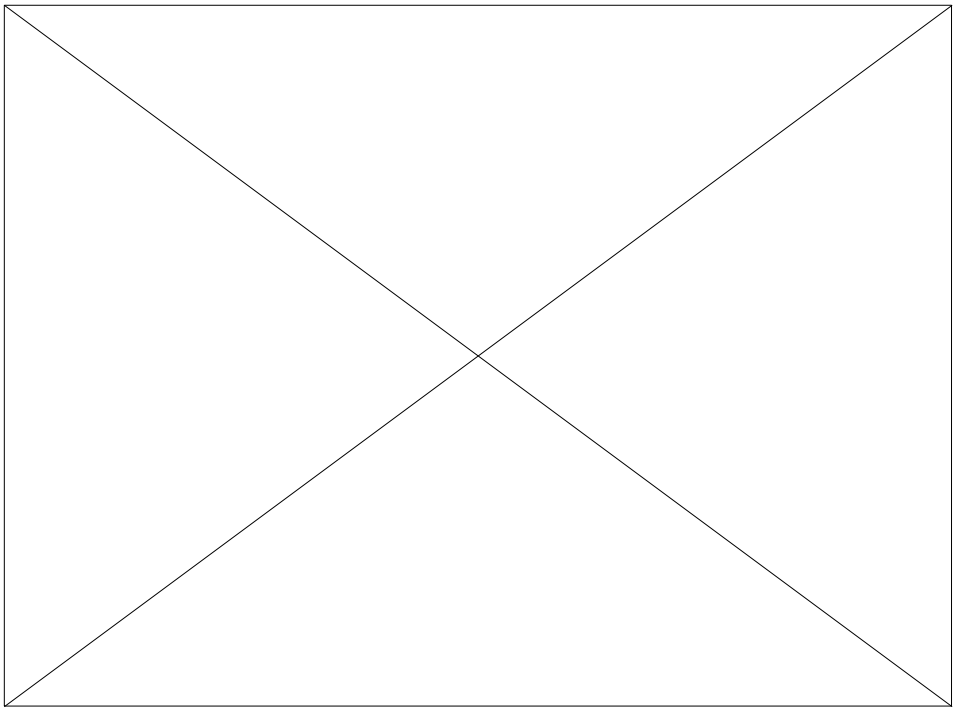

Fig 1: Recorded parameters on laboratory request forms N= 104

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A total of 104 request forms received between Jan-Dec. 2010 were analyzed for specific parameters. Sex of the patient was recorded in 102 (98%) of the forms, diagnosis was recorded in 91 (88%) of the forms, while none 0 (0%) had the medication history.

The quality of a test result has been historically determined by the accuracy of the analytical phase. With the emergence of high quality analytical techniques, errors in the laboratory result can no longer be solely attributed to the analytical phase (1). Clinical authorization of results provides a final quality check of the entire pre-analytical and laboratory process and is an important addition to standard quality control procedures (2). Interpretative comment on laboratory request forms is important to the physicians because of inadequate exposure to clinical biochemistry training at the undergraduate level (3). A study of numerous thyroid function test (TFT) requests on patients taking thyroxine replacement therapy showed that introducing interpretative comments resulted in a significant decrease in thyroxine under – replacement (4). Interpreting (TFTs) may be time consuming; the problem can also be compounded by limited clinical information on the request forms. There could therefore be interpretative errors as a result of inadequate or inappropriate clinical information supplied by the requesting physician.

Fig 1. shows the result of the request forms when analyzed for the pre–analytical quality indicators recorded in Table 1. The most uncompleted parameter was the medication that the patient was taking. None of the forms had this information recorded.

The results shows that laboratory request forms received in our laboratory were not adequately completed. The drugs that the patients were taking should be indicated on the forms. A patient with a raised TSH and normal T4 may be reported as a case of subclinical hypothyroidism, when the cause may in fact be non–compliance or inadequate dosage, if the patient was on thyroxine replacement therapy (5). Some drugs can even interfere with assays (6). A slightly decreased TSH may also be found in non-thyroidal illness and secondary hypothyroidism, and the clinical data may hint at the probable diagnosis (7). Serum T4 is normally slightly higher in males than females, and the TSH level decreases with age (8, 9).

Table 1

Parameter	No recorded (%) n =104
1. Medication	0 (0%)
2. Physician contact no	0 (0%)
3. Hospital no	103 (99%)
4. Sex	102 (98%)
5. Names	101(97%)
6. Diagnosis	91(88%)
7. Consultant	92(88%)

We conclude that when the sex of the patient is not known, and the medication not stated, the interpretation of the thyroid function test may be inaccurate or misleading. Incomplete laboratory request forms may lead to misinterpretation of results and inappropriate interpretative comments. Further research to assess the impact of misinterpretation of TFT results on the outcome of patient treatment needs to be undertaken.

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