2173 Gamma-interferon tests for the diagnosis of tuberculosis infection under routine conditions in Lausanne, Switzerland
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Aim: To describe the experience with the performance of Gamma-Interferon tests for the detection of tuberculosis infection under routine clinical conditions in a private analytical laboratory in Lausanne, Switzerland.

Method: Retrospective analysis of all T-SPOT.TB tests performed in 2005, on request of the local Office of Public Health and Lung Association in charge of contact tracing for tuberculosis, local hospitals, private physicians and organizations caring for immigrants.

Results: We performed 1435 tests, of which 396 (28%) were positive, 880 (68%) negative and 59 (4%) indeterminate. The main indications were contact tracing among contacts of tuberculosis patients, screening of immigrants with positive tuberculin skin tests, surveillance of health care workers, search for latent infection among immunosuppressed patients and TB suspects. By age groups, tests were more frequently indeterminate among children < 5 years (5%) and adults > 60 years (11%). Most indeterminate tests were due to the lack of stimulable lymphocytes.

Proportion of positive, negative and indeterminate T-SPOT.TB tests, by age group

<table>
<thead>
<tr>
<th>age group (years)</th>
<th>0-5</th>
<th>6-14</th>
<th>15-29</th>
<th>30-59</th>
<th>60+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>positive</td>
<td>3</td>
<td>9</td>
<td>100</td>
<td>115</td>
<td>69</td>
<td>396</td>
</tr>
<tr>
<td>negative</td>
<td>15</td>
<td>22</td>
<td>181</td>
<td>610</td>
<td>132</td>
<td>880</td>
</tr>
<tr>
<td>indeterminate</td>
<td>1</td>
<td>5</td>
<td>28</td>
<td>24</td>
<td>24</td>
<td>59</td>
</tr>
<tr>
<td>total</td>
<td>19</td>
<td>31</td>
<td>286</td>
<td>873</td>
<td>226</td>
<td>1435</td>
</tr>
</tbody>
</table>

Conclusions: Gamma-Interferon tests can be performed under routine clinical conditions. The proportion of indeterminate results is low, possibly increasing with age and associated comorbidity or lack of stimulable lymphocytes. Above the age of 6 years, positivity is unrelated to age.
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2179

Relationship between the whole blood interferon-gamma responses and the risk of active tuberculosis

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Objective: The new diagnostic method for M. tuberculosis (MTB) infection, QuantiFERON®-TB Gold (QFT), measures interferon-gamma (IFN-γ) produced in whole blood stimulated with the MTB specific antigens ESAT-6 and CFP-10. Although IFN-γ responses above the test cut off are diagnostic for MTB infection, the relationship between level of IFN-γ response and the risk of progression to active tuberculosis (TB) is unknown. We analyzed this relationship among QFT positive individuals identified in a contact investigation.

Subjects and methods: People exposed to an index case with active pulmonary TB were tested using QFT. The IFN-γ responses of those who developed TB were compared with those who did not develop TB.

Results: Among 135 subjects, 90 (67%) were QFT positive. All subjects were evaluated for active TB by chest X-ray examination at the time of QFT testing and 19 were diagnosed with active TB based on radiographic abnormalities consistent with TB. All of these 19 subjects were QFT positive, and their average level of IFN-γ production was 6.5±7.26 IU/ml compared with 4.2±4.81 IU/ml for those who did not develop TB; not significantly different. However, when all QFT positive responders were classified into two groups (low responders and high responders) based on an arbitrary IFN-γ cut off of 5 IU/ml, the rate of TB development in high responders (33.3%) was twice that seen in low responders (15.9%: p=0.063).

Conclusion: Our results suggest that subjects with high levels of IFN-γ production in response to either ESAT-6 and/or CFP-10 in the QFT test have a higher possibility of active TB than QFT positive subjects with lower levels of IFN-γ.

2180

Contribution of the T-SPOT.TB assay for detection of latent tuberculosis infection (LTBI) in contact tracing procedures

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Setting: Prospective study of subjects screened during contact-tracing procedures, comparing the tuberculin skin test (TST) and a blood assay quantifying IFN-gamma production by lymphocytes exposed to antigens of specific M. tuberculosis complex (T-SPOT.TB).

Methods: 6 different scores of exposure to index case; simultaneous testing by TST and T-SPOT.TB.

Patients: 309 subjects (aged 40±13 years, 52% M, 87% BCG-positive) screened; 73 index cases of active pulmonary TB.

Results: 166 subjects (54%) had LTBI according to TST and 123 (40%) according to T-SPOT.TB; 111 subjects (36%) had both negative TST and T-SPOT.TB; 91 subjects (29%) had both positive TST and T-SPOT.TB; 75 (24%) had a positive TST and negative T-SPOT.TB (90% of them had a BCG); 32 (10%) had a positive T-SPOT.TB and negative TST. Agreement between TST and T-SPOT.TB (kappa: 0.32) was low. The odds ratios of a positive T-SPOT.TB or TST were modified for all exposure variables. Among the 6 scores used, exposure was significantly related to result of TST in 3, and to that of T-SPOT.TB in 4. In a 2-way analysis of variance, the number of positive exposure indicators was significantly associated with T-SPOT.TB status (p=0.015), but not with TST status (p=0.15).

Conclusion: Our results suggest that subjects with high levels of IFN-γ production in response to either ESAT-6 and/or CFP-10 in the QFT test have a higher possibility of active TB than QFT positive subjects with lower levels of IFN-γ.

198. Pulmonary embolism

2181

Medical treatment in persistent pulmonary hypertension after pulmonary thrombendarterectomy in patients with chronic thromboembolic pulmonary hypertension

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Introduction: Oral therapy with bosentan in inoperable patients with chronic thromboembolic pulmonary hypertension has shown to improve hemodynamics and exercise tolerance. Some patients do either not improve significantly after pulmonary thrombendarterectomy or deteriorate quickly. Therapeutic options in these patients are limited if no indication for reoperation is to be seen.

Methods: In our pulmonary hypertension unit three patients were evaluated after pulmonary thrombendarterectomy with nonsatisfying long term results for further treatment. Six-minute-walk distance in all patients was below 380 meters. There was no indication for reoperation on the underlying thromboembolic disease. We treated two patients with bosentan and one patient with sildenafil and reevaluated them in a regular follow-up.

Results: The patient on sildenafil and one patient on bosentan improved in maximal oxygen consumption after 9 months of treatment from 11.2 ml/kg body weight/min to 20.7 ml/kg body weight/min and 13.6 ml/kg body weight/min to 16.6 ml/kg body weight/min, respectively. The third patient had less improvement in maximal oxygen consumption from 9.9 ml/kg body weight/min to 10.2 ml/kg body weight/min. Further measurements were undertaken, such as 6-minute-walk-test or proBNP estimation.

Conclusions: Both either bosentan and sildenafil might improve exercise capacity in patients deteriorating after pulmonary thrombendarterectomy who do not have an option for reoperation.

2182

Internal validation of a model to predict the risk of short-term (10 days) adverse outcomes in patients with pulmonary embolism (PE)

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Aim: to validate a scale to identify patients with low risk of short-term (10 days) adverse events (death, recurrences and haemorrhages) after an acute Pulmonary Embolism (PE) Arch Bronconeumol 2005; 41:10.

Methods: we obtained a predictive scale of adverse events (1). The validation of this scale was carried out in 254 patients diagnosed with PE from February to August of 2005 at 8 Spanish hospitals. The point cut-off was obtained using a ROC curve. The results in the validation sample have been compared with the original derivation sample.

Results: the group of patients diagnosed with PE were 260 patients, 151 women (average age 70.5 years) and 109 men (average age 64.6 years). Six patients (0.2%) were excluded due to mistakes of the basal variables. Finally we could evaluate the predictive model in 254 patients. The area under the ROC curve in the validation sample was 0.73 (95% CI 0.56-0.90). Positive likelihood ratio of 1.90 (95% CI 1.29-2.78) and negative likelihood ratio of 0.30 (95% CI 0.05-1.79).

Conclusions: the predictive model to identified patients diagnosed with PE with low risk of premature adverse events was successfully validated obtained similar results than the original derivation sample.

2183

Quantitative latex D-dimer outperforms pre-test probability scoring systems in assessment of possible pulmonary embolism

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Objective: To compare the performance of Wells pre-test probability score and the D-dimer alone in the assessment of Pulmonary Embolism (PE) in patients presenting to the Emergency Department from the community.

Methods: All patients presenting to the acute care setting with possible PE over a 12 months period were included in the study. Entry points into the study were