population aged =65, the prevalence of a positive IGRA result was between 18% and 37% (95% CI).

Conclusions IGRA positivity was found to be lowest in the white British population compared with other ethnic groups. Interestingly, of the UK indigenous white elderly population almost 1/3 are infected with TB (latent or active) highlighting significant disease burden among older age groups. With IGRAs heralded as the more specific and reliable diagnostic test, such results may aid future planning and policy making for the management of TB in the UK.

P17 CLINICAL UTILITY OF THE TUBERCULOSIS INTERFERON GAMMA TEST (IGT) IN A LOW INCIDENCE AREA

doi:10.1136/thoraxjnl-2011-201054c.17

J T Donovan, A Yogendran, I D Ramsay, C Giles, R W Lee, A T Scourfield, S R Doffman. *Department of Respiratory Medicine, Brighton and Sussex University Hospitals NHS Trust, Brighton, UK*

Introduction The clinical utility and cost effectiveness of IGT in low prevalence areas of TB remains unclear. In some clinical settings it has been used to exclude active disease. We describe the experience of IGT in a teaching hospital in a low prevalence area (13/100 000).

Methods We identified individuals who had undergone IGT for any indication from 01 January 2010 to 30 June 2011. Case notes and electronic records were reviewed retrospectively to identify baseline demographics, indications for testing and outcomes where a positive result was identified. Healthcare workers, contacts of TB and new entrants were all screened for latent TB infection (LTBI) with tuberculin skin test and if positive, IGT (as per NICE, 2006). Those on immunosuppressant therapy had IGT alone if a risk factor was identified. In May 2011, there was a change in local contract from QuantiFERON® TB-Gold In-Tube (QFT), Cellestis International, Australia to T Spot-TB® (TSp) Oxford Immunotec, Abingdon, UK.

Results 179 cases were identified, 75 (42%) cases had TSp performed and 104 (58%) cases with QFT. There were 5 (3%) indeterminate results (QFT: 4 [4%]; T Spot-TB: 1 [1%]). Two TSp tests could not be processed as there were insufficient white cells (both haemato-oncology patients). Median age was 40 years (IQR 25–60), the majority were from Europe 135 (75%). Other ethnicities included African 17 (9%), South East Asian 14 (8%), Western Pacific 5 (3%), Eastern Mediterranean 4 (2%) and the Americas 4 (2%). 108 (60%) cases were performed to exclude latent TB infection and 71 (40%) to exclude active TB (see Abstract P17 table 1).

Abstract P17 Table 1

	Indication	Number (n=179)	No. +ve IGRA (n=32) (% of group)	Treated latent/ active TB (n=21) (% of positive IGRA)
Latent TB (n=108)	Pre-Anti TNF therapy	45	1 (2%)	1 (100%)
	Contact screening	29	11 (38%)	5 (45%)
	Healthcare worker screening	23	6 (26%)	4 (75%)
	New entrant	11	4 (36%)	2 (50%)
To exclude active TB (n=71)	Fever, lymphadenopathy or systemically unwell	43	7 (16%)	6 (86%)
	Uveitis/choroiditis	15	3 (20%)	2 (66%)
	HIV infection	2	0 (0%)	0 (0%)

Conclusions In a low incidence population, approximately one third of new UK entrants, contacts and health-care workers were diagnosed with latent TB, 56% of whom received chemoprophylaxis. The role of IGT to screen for active disease is unclear and requires further investigation. However, it may be of use in patients with uveitis/choroiditis. In those patients with a positive IGT, 80% went on to receive standard therapy for active TB, all of whom clinically improved. However, screening for LTBI was less cost effective for those undergoing biological therapy with only one positive (2%) result.

P18 HOW EFFECTIVE IS THE RECOMMENDED STAGING FOR LATENT TB FOLLOW-UP?

doi:10.1136/thoraxjnl-2011-201054c.18

D Thomas, M Jarvis, A Williams. *Royal Bournemouth Hospital, Bournemouth, UK*

Introduction NICE (2011) recommends that patients with latent TB infection who are eligible for but decline treatment are followed up with a chest x-ray (CXR) at 3 and 12 month intervals to assess for TB reactivation. The aim of this study was to assess the effectiveness of this strategy in detecting reactivation of TB.

Method

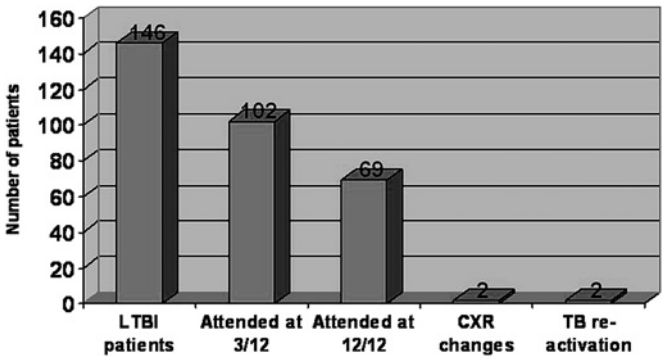
- A retrospective case note analysis of 146 latent TB patients (2006–2011) of all ages.
- Mode age range 16–35 (46%).
- Follow-up attendance, clinical presentation, CXR appearances and patient demographics were recorded.

Results

- 47% (n=69) attended for follow-up at 3 and 12 months.
- 18% DNA at 3 months, 35% DNA at 12 months. 13% moved away.
- 98.6% of patients showed no evidence of TB reactivation in a 12-month period.
- 52% of patients were under 35.
- 2 (1.4%) patients developed active TB within a 12-month period. One was found to have CXR changes at the 3-month follow-up, and was later admitted with TB meningitis. The other was symptomatic (no CXR changes) and was treated empirically for active TB.
- 63% were new entrants; 41% had been in the UK <1 year.
- 1 patient was immunosuppressed.
- Common risk factors for LTBI were ethnicity (73%) and occupational exposure (19%). Only 12% recalled previous TB contact.

Discussion

- 3 and 12-month follow-up had a very low yield of detecting TB reactivation in this sample (1.4%).
- It cost £16 000 (based on current PbR tariff) to screen the 69 patients who attended at 3 and 12 months.
- Use of limited resources must be justified. Are there better staging intervals for follow-up?
- Follow-up is also associated with a high DNA rate, particularly at 12 months, further stretching resources.
- However, follow-up allows health promotion regarding TB symptoms and the role of chemoprophylaxis.



Abstract P18 Figure 1 Effectiveness of latent TB follow-up.

Conclusion These results question the validity of following up LTBI patients at 3 and 12 months after diagnosis. Further longitudinal studies are needed to determine the optimum intervals for follow-up.

REFERENCE

1. NICE. *Tuberculosis: Clinical Diagnosis and Management of Tuberculosis, and Measures for Its Prevention and Control*. NIHCE, London, 2011.

P19 GENEXPERT MTB.RIF ASSAY IMPROVES THE DIAGNOSTIC YIELD OF EBUS-TBNA IN SMEAR-NEGATIVE INTRA-THORACIC TUBERCULOUS LYMPHADENOPATHY

doi:10.1136/thoraxjnl-2011-201054c.19

[1]D J Dhasmana, [1]C J Bradley, [1]P George, [2]D W Connell, [1]P Molyneaux, [1]A Singanayagam, [2]A Lalvani, [1]A Jepson, [1]O M Kon, [3]G S Cooke. *[1]St Mary's Hospital, Imperial College Healthcare Trust, London, UK; [2]Tuberculosis Research Unit, Department of Respiratory Medicine, National Heart and Lung Institute, Imperial College London, London, UK; [3]Division of Infectious Diseases, Department of Medicine, Imperial College London, London, UK*

Introduction and Objectives Tuberculosis notifications in the UK continue to rise and the diagnosis of both disease and drug resistance can be challenging. Endobronchial ultrasound (EBUS) and EBUS-guided transbronchial nodal aspirates (TBNA) have been shown recently to be a safe and effective tool in the diagnosis of intra-thoracic TB lymphadenopathy. New molecular techniques, notably the GeneXpert MTB.Rif system (Cepheid) have shown great promise in the diagnosis of pulmonary disease but have not been evaluated in intra-thoracic nodal disease.

Methods As part of an ongoing study, consecutive patients with intra-thoracic lymphadenopathy were prospectively studied within our tertiary EBUS service between January 2010 and March 2011. In addition to standard cytological and micro-biological investigations, a single GeneXpert MTB.Rif assay was performed on EBUS-TBNA samples. Using established methods, a final diagnosis was given of definite/highly probable TB, possible TB or not TB/alternative diagnosis. Performance of the GeneXpert MTB.Rif assay was then evaluated in the context of these final diagnoses.

Results 74 patients (3 HIV-positive) underwent EBUS-TBNA sampling. Nineteen have been diagnosed with definite/highly probable TB to date. A single GeneXpert assay had a sensitivity of 67% (8/12) from culture-positive TBNA. 11/15 (73%) of patients with a positive culture from any tissue and 13/19 (68%) patients classed as definite/highly probable TB had positive GeneXpert results. One case of confirmed MDR-TB was correctly identified and treatment started promptly. Fifteen patients had positive GeneXpert MTB.Rif results from EBUS-TBNA: 13/15 were given immediate TB treatment. One of the remaining two cases without strong microbiological or cytological findings was subsequently diagnosed with active tuberculosis supported by evidence of PET-positive mediastinal lymph nodes. The other case appears not to have active disease and remains under follow-up.

Conclusions A single GeneXpert MTB.Rif assay has good sensitivity in the context of culture-positive intra-thoracic tuberculous lymphadenopathy and can provide an immediate diagnosis of likely MDR-TB. Positive PCR results were seen in two patients where conventional techniques were inconclusive and in one provided the main support for the diagnosis. These results suggest the addition of the GeneXpert MTB.Rif assay to the investigation of intra-thoracic nodal disease improves diagnostic yield.

Sleep: clinical studies

P20 IMPACT OF PATIENTS' PERCEPTION OF PROBLEM DRIVING, SYMPTOMS AND SEVERITY OF OBSTRUCTIVE SLEEP APNOEA SYNDROME (OSAS) ON OUTCOMES ON AN ADVANCED OFFICE BASED DRIVING SIMULATOR

doi:10.1136/thoraxjnl-2011-201054c.20

[1]D Ghosh, [2]S L Jamson, [3]P D Baxter, [1]M W Elliott. *[1]St. James' University Hospital, Leeds, UK; [2]Institute for Transport Studies, University of Leeds, Leeds, UK; [3]Centre for Epidemiology & Biostatistics, University of Leeds, Leeds, UK*

Introduction Currently advice about an OSAS patient's fitness to drive is based upon the severity of the condition, with or without objective measure of daytime sleepiness and their account of their driving. Although there is a trend towards increased likelihood of accidents with more severe OSAS, this is not sufficiently robust data. There are conflicting data about the relationship between perceived sleepiness and the likelihood of being involved in an accident. Recently we have established that it is possible to identify with high degree of certainty a group of OSAS sufferers who perform significantly worse than others using specific simulator parameters on an advanced office based driving simulator (miniSim). We now explore the impact of patients' perception of problem driving, demographic, clinical, and polysomnographic characteristics on the outcomes of the simulator test.

Methods 133 (52±10 yrs, ESS 12±5, AHI 29±21) patients completed a detailed driving related questionnaire and performed a 90 km motorway driving scenario on the miniSim. Two events were programmed to trigger evasive actions, one subtle (Veer event) where an alert driver should not crash, while with the other (Brake event) even a fully alert driver might crash. There were three possible outcomes of the simulator runs; "fail", "indeterminate" and "pass". The questionnaire responses, demographic, clinical and polysomnographic characteristics were compared between the three outcome categories using one way ANOVA. Logistic regression was performed to explore whether a "fail" could be predicted from any of these data.

Results The results of one way ANOVA are described in Abstract P20 table 1. Patients who fail the simulator test tend to report more sleepiness while driving with a higher ESS & ODI. They also have more, but statistically insignificant, near misses and history of accidents. None of this information could predict a "fail" accurately in the logistic regression analysis.

Abstract P20 Table 1 Distribution and outcomes of one way ANOVA of clinical parameters and scores for questionnaire categories

	Fail (n=32) Mean (SD)	Indeterminate (n=47) Mean (SD)	Pass (n=54) Mean (SD)	One way ANOVA p Value
Clinical parameters				
Age (yrs)	50 (11)	50 (10)	55 (10)	0.05
BMI (kg/m^2)	34 (6)	35 (8)	34 (5)	0.33
ESS	13 (6)	12 (5)	10 (5)	**0.03**
AHI (events/h)	34 (24)	30 (23)	25 (16)	0.2
ODI (events/h)	39 (27)	35 (28)	23 (15)	**0.01**
Scores for different questionnaire categories				
Sleepiness while driving	12 (11)	7 (8.5)	7 (8.3)	**0.03**
Nods/rumble	1.22 (1.47)	0.78 (1.19)	0.77 (1.34)	0.27
Accidents/near misses	0.75 (1.39)	0.78 (1.69)	0.46 (0.86)	0.42
Coping strategies	7.1 (4.3)	6.7 (4.9)	6.6 (4.5)	0.69

AHI, Apnoea Hypopnoea Index; BMI, Body Mass Index; ESS, Epworth Sleepiness Score; ODI, Oxygen Desaturation Index.

Conclusions These data confirm that patients' accounts and perception of their own driving and the severity of their OSAS may