primaries (breast, colorectal, bladder and renal) and 2 lymphomas. Of the 248 primary lung cancers, 88 (35%) had adjuvant chemotherapy and 27 (11%) had adjuvant radiotherapy including cranial irradiation. A total of 40/298 (13%) patients had recurrence in first year of which 20 died within 1 year.

Based on previously used definition,[1] the futile thoracotomy rate was 33% (99/298) – see Table 1. If surgical resection of benign lesions is considered diagnostic, the futile thoracotomy rate would be 23% (68/298).

Abstract P108 Table 1 Distribution of futile thoracotomy, n(%)

Benign lung lesion	31 (31)
R2 Resection	3 (3)
Stage IIIA-IV	17 (17)
Recurrence within 1 year	20 (20)
Deaths within 1 year	28 (28)

Conclusion The definition of futile thoracotomy is debatable, but the risk remains high. Prior to surgery every effort should be made to minimise the risk by using combined staging modalities including minimally invasive diagnostic tools and appropriate patient selection.

REFERENCE

1 Fischer B, Lassen U, Mortensen J, *et al*. Preoperative staging of lung cancer with combined PET-CT. *N Engl J Med* 2009;**361**:32–9.

Tuberculosis: Clinical Aspects

P109 THE IMPACT OF TB NICE GUIDANCE ON RESOURCE CAPACITY AND CONTACT SCREENING OUTCOMES: A RETROSPECTIVE, OBSERVATIONAL STUDY WITHIN A CENTRAL LONDON TB CENTRE

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Introduction and objectives Recently published NICE guidance has significantly expanded the approach to adult tuberculosis (TB) contact screening by recommending tuberculin skin testing (TST) for pulmonary and laryngeal contacts only, increasing the age threshold for screening and treatment to 65 years and defining a positive TST as induration ≥5 mm, regardless of BCG vaccination status. Interferon Gamma Release Assay (IGRA) is recommended only in situations where more evidence of infection is needed.

Our institution has previously adopted an approach comprising a chest radiograph, TST and IGRA.

The aim of our study was to evaluate the impact of NICE guidance on screening outcomes and resource capacity by applying the criteria to a well-defined historic cohort of TB contacts.

Methods This was a retrospective, observational study carried out at a central London teaching hospital. The study population comprised 593 consecutive, adult TB contacts screened between 1/1/2008 and 31/12/2010. Data was collected through a retrospective review of TST and IGRA tests.

Results Of the 593 contacts screened, 358 pulmonary contacts had TST and IGRA results. 56% had a TST ≥5 mm, regardless of BCG status, qualifying them for treatment as per the new NICE guidance. Of these, 61% were IGRA negative (discordant) and may therefore include false positive diagnoses, resulting in the potential for over treatment. In those with TST 5–14 mm, discordance rises to 84%. Conversely, 6% of those with TST < 5 mm are IGRA positive representing potentially missed cases.

16% of screened individuals were contacts of extra pulmonary TB. Not screening this group would reduce the demand for outpatient appointments by 151* in our cohort. In contrast, testing contacts > 35 years would require capacity for an additional 165* appointments. Furthermore, there were 162 additional LTBI cases in comparison to previous guidance requiring an additional 648* appointments. 72% of this group were IGRA negative.

(*Approximate)

Conclusions Our results show the revised guidance will require increased resource capacity largely due to more patients being classified as having latent TB. In addition to workforce planning to meet these demands, further debate is needed to decide if this new approach truly reduces the incidence of active TB or results in unnecessary treatment.

P110 THE ROLE OF TB CHEMOPROPHYLAXIS IN RENAL TRANSPLANT RECIPIENTS

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Background Rates of tuberculosis infection are increased after solid organ transplant. This is associated with increased mortality and allograft loss in one third of cases. The WHO recommend testing for latent tuberculosis (LTBI) in patients receiving dialysis or preparing for solid organ transplant. BTS and ERS guidelines suggest screening for LTBI where tuberculosis incidence rates are high or in patients with risk factors for developing tuberculosis in low incidence areas. They go on to propose chemoprophylaxis with isoniazid or three months of rifampicin and isoniazid, with above 60% effectiveness at preventing subsequent tuberculosis. Guidelines at a large renal transplant centre advocate isoniazid prophylaxis for 6 months post transplant in all patients of Indo-Asian or African heritage as well as anyone who is from a country with TB incidence rates above 40/100,000 who have been in the UK for less than 5 years.

Methods All patients who underwent renal transplantation between January 2011 and December 2014 were assessed to see if tuberculosis prophylaxis was prescribed as per guidelines. Cases of subsequent TB were then identified.

Results 912 patients underwent renal transplant during this time. 243 (26.6%) received isoniazid prophylaxis, with 88% adherence to trust guidelines. 42 (4.6%) patients who should have received prophylaxis did not. During this time one patient developed tuberculosis post transplant. This individual should have received isoniazid according to guidelines, but did not. Another patient from sub-Saharan Africa was discovered to have abdominal tuberculosis when on the operating table prior to transplant.

Discussion We are not aware of any LTBI screening programme amongst renal transplant units in the UK currently. Many use prophylactic isoniazid in a similar manner to our trust. Pre-emptive screening with interferon gamma release assays costs approximately £60 per test, 6 months of isoniazid £560 and 3 months of rifampicin and isoniazid costs £185. Whilst screening may

reduce overall costs and may identify patients earlier, protocol based isoniazid prophylaxis is effective in preventing active tuberculosis.

Conclusion While Isoniazid prophylaxis was effective in prevention of subsequent tuberculosis, screening prior to transplantation should have identified both patients who developed TB.

P111 OLDER PATIENTS WITH TUBERCULOSIS HAVE LESS TYPICAL CHANGES ON CHEST RADIOGRAPHS

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Introduction and objectives It has been suggested that TB has a different phenotype in older patients with age-related changes to the cell-mediated immune response and co-existent organ dysfunction. Older patients with tuberculosis (TB) may have different radiographic features than younger patients; this may lead to less immediate suspicion of TB resulting in delays to diagnosis and starting treatment. We wanted to identify if there are differences in the most common radiological differences in older and younger patients with pulmonary TB (PTB).

Methods Patients with PTB > 65 were noted from the London TB register between 2002 and 2015. A random selection of younger patients aged 18–40 with PTB were also identified. All available chest x-ray (CXR) reports were obtained from online radiology systems. CXR features were classified according to reported features with particular note of cavitation, nodules and miliary changes, consolidation, lymphadenopathy and effusions.

Results The CXR reports of 239 patients with PTB < 65 and 99 patients with PTB > 65 were collated. Demographic details as well as CXR changes are detailed in Table 1. Cavitation, lymphadenopathy and effusions were more common in younger patients whereas consolidation was more evident in older patients. Upper zone involvement was similar in both groups.

Conclusions Studies by other groups have suggested a higher proportion of cavitation and upper zone changes in younger patients with TB with less specific changes in older patients. This may lead to less suspicion of TB and potentially a longer infective period; this is important given that 23% and 19% of younger and older patients have smear positive PTB. In our study, the proportion with upper zone changes are similar though cavitation is more frequent in younger patients. Of note, is the much higher presence of lymphadenopathy and effusions seen in younger patients. This may potentially be related to differences in the immune function of both groups or primary infection versus reactivation. These findings re-enforce the need for clinical suspicion for PTB in both older and younger patients with both specific and non-specific radiographic changes.

Abstract P111 Table 1

Total number of patients with CXR reports	**525**		**184**	
Median age (IQR)	30 (26–34)		73 (69–78)	
Gender	196 female, 329 male		79 female, 105 male	
UK born	45 (8.6%)		13 (7.1%)	
Pulmonary TB patients	239 (45.5%)		99 (53.8%)	
CXR changes	**Number**	**Percentage**	**Number**	**Percentage**
Cavitation	36	15.1	10	10.1
Consolidation	104	43.5	50	50.5
Nodules	39 (7 miliary)	16.3	14 (4miliary)	14.1
Lymphadenopathy	43	18.0	4	4.0
Hilar	19	7.9	4	4.0
Mediastinal	9	3.8	–	–
Paratracheal	14	5.9	–	–
Effusion	59	24.7	8	8.0
Zone of involvement				
Upper zone involvement	118	49.4	49	49.4
Upper and lower	21	8.8	17	17.1
Lower	59	24.7	31	31.3
Microbiology				
Cultured MTB	158	66.1	67	67.7
Smear Positive	56	23.4	19	19.1
Fully sensitive	146	61	61	61.6
INH resistant	7	2.9	1	1.0
MDR	1	0.4		
XDR	1	0.4		
Diabetes	2	0.8	28	28.2

P112 SERUM INFLAMMATORY BIOMARKERS AS PREDICTORS OF TREATMENT OUTCOME IN PULMONARY TUBERCULOSIS

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Background The aim of this study was to evaluate C-reactive protein(CRP), globulin and white cell count as predictors of treatment outcome in pulmonary tuberculosis.

Methods An observational study of patients with active pulmonary tuberculosis was conducted at a tertiary centre. All patients had serum CRP, globulin and white cell count measured at baseline and two months following commencement of therapy. The outcome of interest was requirement for extension of therapy beyond 6 months.

Results There were 226 patients included in the study. Serum globulin >45 g/L was the only baseline biomarker evaluated that independently predicted requirement for therapy extension (OR 3.59 (1.79–7.57; p < 0.001)). An elevated globulin level that failed to normalise at 2 months was also associated with increased requirement for treatment extension(63.9% versus 5.1%; p < 0.001) and had low negative likelihood ratio(0.07) for exclusion of requirement for therapy extension. On multivariable analysis, an elevated globulin that failed to normalise at 2 months was independently associated with requirement for therapy extension (OR 6.12 (2.23–16.80); p < 0.001).

Conclusions Serum globulin independently predicts requirement for treatment extension in pulmonary TB and outperforms CRP and white cell count as a predictive biomarker. Normalisation of globulin at two months following treatment commencement is associated with low risk of requirement for treatment extension.