Abstract S58 Table 1 Cost-effectiveness comparisons between different testing strategies and no testing for TB in people living with HIV assuming a 10% progression rate to active TB in people with a positive IGRA

Strategy	Total cost (per 10,000 PHIV in care)	Cases active TB prevented (per 10,000 PHIV in care)	Incremental cost/case averted (£) compared to no testing	Incremental cost/QALY gained (£) compared to no testing	Incremental cost/QALY gained compared to previous non-dominated algorithm
No testing	£473,137	-	-	-	-
BHIVA	£538,354	5.3	£12,205	£21,475	£21,475
NICE	£616,246	3.7	£38,720	£74,790	Dominated (simple)
TST in all	£725,781	16.3	£15,511	£29,690	Dominated (extended)
IGRA in all	£892,330	14.2	£29,571	£52,033	Dominated (simple)
TST and IGRA in all	£1,100,608	16.7	£37,525	£72,943	Dominated (extended)
TST, IGRA and CXR in all	£1,486,154	27.5	£36,902	£73,558	Dominated (extended)
TST, IGRA, CXR and induced sputum in all	£1,920,744	36.6	£39,587	£79,929	Dominated (extended)

Results 217 assays from 193 patients were included for analysis. 101 patients (52%) were treated for TB (74 pulmonary). A clinical diagnosis of TB was made in In 14 patients. 145 samples (68%) were from the respiratory tract. The remainder were categorised as: fluid (44); tissue (15) and pus (9). Overall 68 (32%) samples were AFB smear positive and 111 (52%) samples were mycobacteria culture positive (80 *M.tuberculosis*). There were 78 (36%) GeneXpert positive results. The assay had superior performance for diagnosis of TB and predicting *M.tuberculosis* culture positive outcomes in AFB smear positive compared with smear negative samples (table). For smear negative, culture positive samples, false negative GeneXpert results were associated with a significantly longer time to culture (mean difference 10.4 days, p = 0.006). For smear negative GeneXpert positive samples, the mean time to positive diagnosis was reduced by 13.3 days but this did not alter the time to starting treatment.

Conclusion In our practice, GeneXpert has high specificity to reliably inform a positive TB diagnosis but lacks sensitivity in smear negative disease to reliably exclude the diagnosis. The decision to start treatment continues to be governed by clinical suspicion in this group.

Abstract S59 Table 1

	Sensitivity% (95% CI)	Specificity% (95% CI)	PPV% (95% CI)	NPV% (95% CI)
GeneXpert performance for TB diagnosis				
Overall	81.61 (71.86–89.10)	98.90 (94.01–99.82)	98.61 (92.47–99.77)	84.91 (76.65–91.11)
Smear Positive	100.00 (93.33–100.00)	100.00 (75.12–100.00)	100.00 (93.33–100.00)	100.00 (75.12–100.00)
Smear Negative	53.12 (34.75–70.89)	98.70 (92.95–99.78)	94.44 (72.63–99.07)	83.52 (74.27–90.46)
GeneXpert performance for culture confirmation				
Overall	90.00 (81.24–95.57)	96.97 (92.42–99.15)	94.74 (87.06–98.52)	94.12 (88.73–97.42)
AFB Positive	100.00 (93.33–100.00)	100.00 (78.03–100.00)	100.00 (93.33–100.00)	100.00 (78.03–100.00)
AFB Negative	69.23 (48.21–85.63)	96.49 (91.25–99.01)	81.82 (59.70–94.70)	93.22 (87.07–97.02)

S60 C – REACTIVE PROTEIN REFLECTS MYCOBACTERIAL LOAD IN ACTIVE TUBERCULOSIS BUT CANNOT BE USED AS A RULE-OUT DIAGNOSTIC TEST

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Background Measurement of the C-reactive protein (CRP) is widely available and is often part of the diagnostic evaluation of patients with suspected Tuberculosis (TB) yet there are little published data regarding its use in this context. We sought to determine CRP's relationship with TB disease and whether normal CRP levels were seen in those without active TB.

Method We undertook a retrospective review of electronic records from the London TB service between 2004–2013, obtained blood results from hospital computer systems and reviewed case-notes where there was uncertainty regarding sites of disease or availability of culture results.

Results Using data from 533 subjects with active TB, 23% of all cases and 16.5% of culture-confirmed cases had a CRP of ≤5 mg/L. Individuals with HIV co-infection had significantly higher median CRP (see Table).

There was a significantly higher CRP in smear-positive pulmonary disease and those with a positive culture. Sites of disease that could be expected to have a high mycobacterial load (e.g. pulmonary disease and disseminated disease) had a significantly higher CRP than those such as skin, lymph node or CNS disease, where the mycobacterial load is typically low in HIV negative subjects. HIV status, site of disease and culture status remained significantly associated with CRP in a multivariable linear regression analysis.

Conclusions These data suggest that CRP cannot be used as a rule-out test for active TB but does reflect mycobacterial load. This has clinical implications given that individuals with a high mycobacterial load may be more infectious (and hence require enhanced contact tracing), be at greater risk of developing drug resistance if non-adherent, and may require prolonged duration of treatment.