

Tables

Manuscript title

Cost-effectiveness of testing for latent tuberculosis infection in people living with human immunodeficiency virus

Running head: Testing for LTBI in people living with HIV

Table 1: Model input parameters required

Variable	Base-case value	Range for SA	PSA distribution	Reference(s)
Probabilities				
Prevalence of LTBI that progressed to active TB	0.022	0.005, 0.086	Beta (0.95, 42.31)	Kowada et al., 2014 ^[13]
Sensitivity TST (≥5mm)	0.54	0.15, 0.89	Beta (2.83, 2.41)	
Specificity TST (<5mm)	0.82	0.48, 0.95	Beta (6.78, 1.49)	
Sensitivity QFT-GIT	0.59	0.15, 0.92	Beta (2.63, 1.83)	Auguste et al., 2019 ^[21]
Specificity QFT-GIT	0.85	0.51, 0.95	Beta (6.47, 1.14)	
Sensitivity T- SPOT.TB	0.57	0.13, 0.92	Beta (2.40, 1.81)	
Specificity T- SPOT.TB	0.83	0.45, 0.96	Beta (5.24, 1.07)	
Sensitivity of CXR for diagnosing active TB	0.78	Not reported	Not varied	Kumar et al., 2005 ^[32]
Specificity of CXR for diagnosing active TB	0.51	Not reported	Not varied	Kumar et al., 2005 ^[32]

Variable	Base-case value	Range for SA	PSA distribution	Reference(s)
Determinate QFT-GIT	0.97	-	Not varied	Derived from Laskin et al., 2013 ^[33]
Determinate T-SPOT.TB	0.97	-	Not varied	Derived from Laskin et al., 2013 ^[33]
Probability of TST read	0.94	0.6, 1.00	Beta (164, 10.5)	Pareek et al., 2013 ^[30]
Probability of initial active TB	0.00001	-	Not varied	Laskin et al., 2013 ^[33]
TB treatment adherence	1.00	-	Not varied	Pareek et al., 2013 ^[30]
Accepting LTBI treatment	0.94	0.50, 1.00	Not varied	CG117 ^[34]
Adherence to LTBI treatment	0.80	0.50, 0.90	Beta (41, 10)	Kowada (2013) ^[35]
INH hepatitis after TB treatment	0.0040	0.001, 0.010	Not varied	Assumption
Death from INH hepatitis	0.00002	0.00001, 0.0001	Not varied	Pooran et al., 2010 ^[27]
<u>Transmission-Markov model parameters</u>				
Proportion still infected post LTBI treatment	0.345	-	Lognormal (-1.065, 0.842)	White and Jit (2015) ^[36]
<u>Reactivation from LTBI to</u>	<u>0.26%</u>		<u>Not varied</u>	<u>Oxlade et al., 2011^[37]</u>

Variable	Base-case value	Range for SA	PSA distribution	Reference(s)
active TB (per year)				
Resource use and costs				
TST	£20.27		Not varied	Pooran et al., 2010 ^[27]
QFT-GIT	£56.51		Not varied	Pooran et al., 2010 ^[27]
T-SPOT.TB	£69.09		Not varied	Pooran et al., 2010 ^[27]
Chest x-ray	£35.95		Not varied	NHS reference costs 2017/18 ^[28]
Sputum examination	£8.12		Not varied	NHS costs 2012/13 ^[38]
Cost of adherence to active TB treatment	£6333.50		Gamma (12.07, 608.40)	Bothamley et al., 2002 ^[29]
Cost of non-adherence to active TB treatment	£1055.58		Not varied	Assumption
Cost of adherence to LTBI treatment	£785.23		Uniform (593.43, 977.03)	Auguste et al., 2016 ^[26]
Cost of non-adherence to LTBI treatment	£130.88		Uniform (85.24, 140.41)	Assumption

Variable	Base-case value	Range for SA	PSA distribution	Reference(s)
Treatment of INH-induced hepatitis	£451.73		Gamma (8.27, 64.53)	Pareek et al., 2013 ^[30]
Utility decrements				
No LTBI	0.997	0.9, 1 [†]	Beta (13.28, 0.04)	Laskin et al., 2013 ^[33]
LTBI	0.997			
TB	0.680	0.65, 0.72	Beta (461.15, 217.01)	
Resolved TB	0.850	0.75, 0.95	Beta (39.8, 7.02)	Kowada et al., 2012 ^[39]
Other				
Discount rate	3.5%		Not varied	

per annum
(costs and
QALYs)

CXR, chest x-ray; IGRA, Interferon-gamma release assay; INH, Isoniazid; LTBI, Latent tuberculosis infection; NHS, National Health Service; QALY, quality adjusted life-years; QFT-GIT, QuantiFERON Gold-In-Tube; SA, Sensitivity analysis; TB, tuberculosis; TST, Tuberculin skin test

[†] Assumption

Table 2: Deterministic analysis results based on cost per QALY (2018/19 prices)

Strategy	Estimated mean costs (£)	Incremental mean costs (£)	Effects (QALYs)	Incremental QALYs	ICER (cost per QALY)
No screening	£0	-	21.2881	-	-
TST5mm	£136.95	£136.95	21.3015	0.0134	£10,220
QFT-GIT	£163.59	£26.63	21.3037	0.0022	£12,105
T-SPOT.TB	£189.16	£25.58	21.3032	-0.0005	Dominated
QFT-GIT -ve	£276.50	£112.91	21.3093	0.0056	£20,163

followed by
TST5mm

ICER, incremental cost-effectiveness ratio; N/A, not applicable; QALY, quality adjusted life-year; QFT-GIT, quantiferon gamma-release assay; TST, tuberculin skin test