بسم الله الرحمن الرحيم

TB in Transplantation

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NRITLD

rculosis tends to behave as an opportunistic infection
nts with solid organ transplants (SOTs).

ncidence of infection among such patients is estimate
0–74 times that for the general population

rculosis may directly contribute to graft dysfunction, a
ciated with a high mortality rate.

nosuppressive therapy

y of exposure to *Mycobacterium tuberculosis*

ic renal insufficiency or hemodialysis (kidney transplantation

tes mellitus

itis C virus infection (kidney transplantation)

ic liver disease

coexisting infections: profound mycoses, cytomegalovirus,

transplant recipients:2.5%

y transplant recipients:0.5-15%

transplant recipients:1-1.5%

transplant recipients:2-6.5%

marrow transplant (BMT) recipients:0.23-0.79%

most common form of acquisition of tuberculosis after
plantation is the reactivation of latent infection in patie
previous exposure.

ssible yet less common mechanism of transmission is
ansplanted organ

comial transmission has also been described in a ren
plant program

isk of TB is highest in the first year post-transplant, d
me of maximal immunosuppression, with a median o
onths
splant recipients are at risk of other opportunistic
tions at this time, and the diagnosis may therefore be
ooked, especially in areas of low-TB endemicity, resu
yed treatment and poor outcomes

renal transplants

raft rejection

unosuppressive the therapy with OKT3 or anti–T cell
odies

ous exposure to *M. tuberculosis*

etection of lesions suggestive of tuberculosis by
ansplantation chest radiography

ransplant screening for LTBI may be performed with

and/or IGRA, although some transplant candidates wi

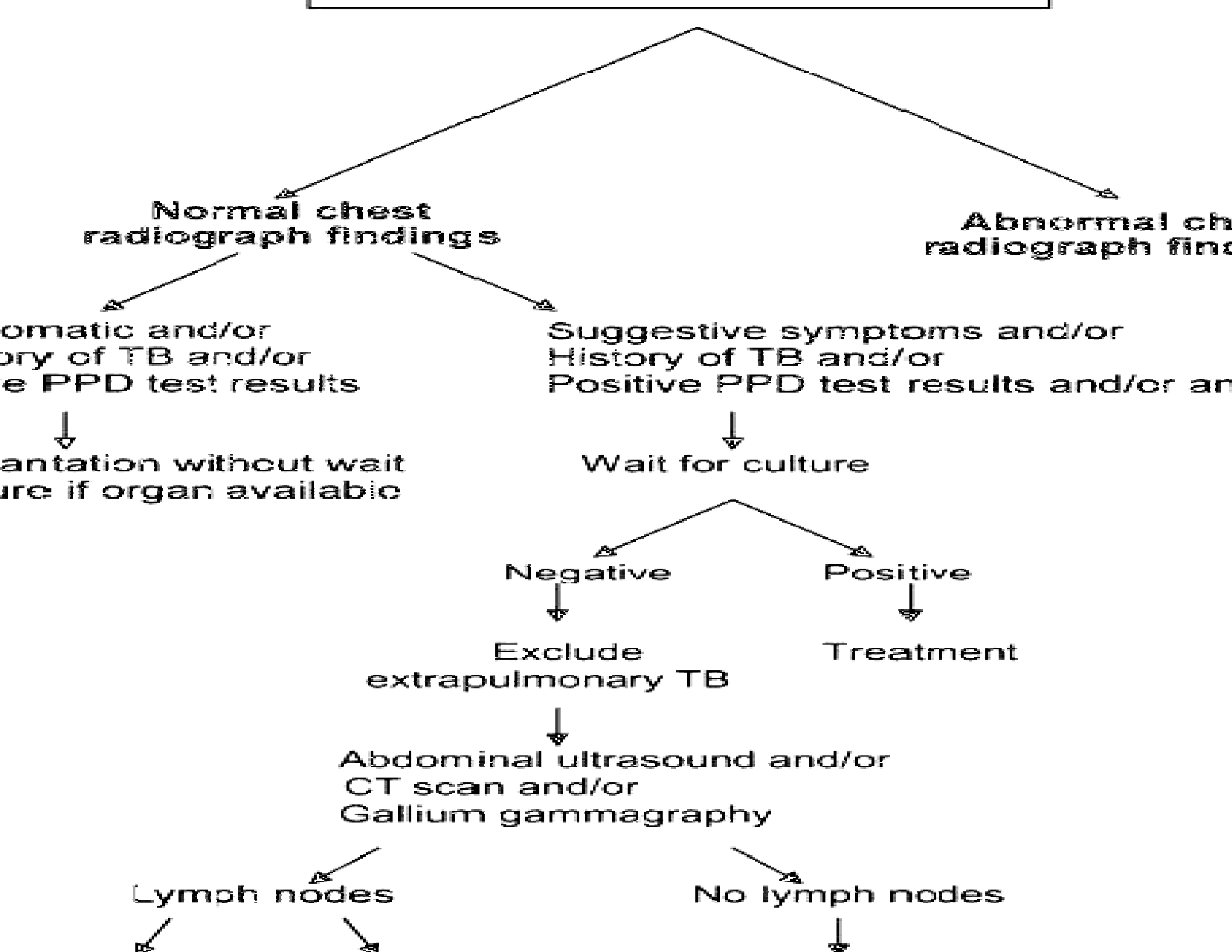
may have false-negative results despite a high-risk

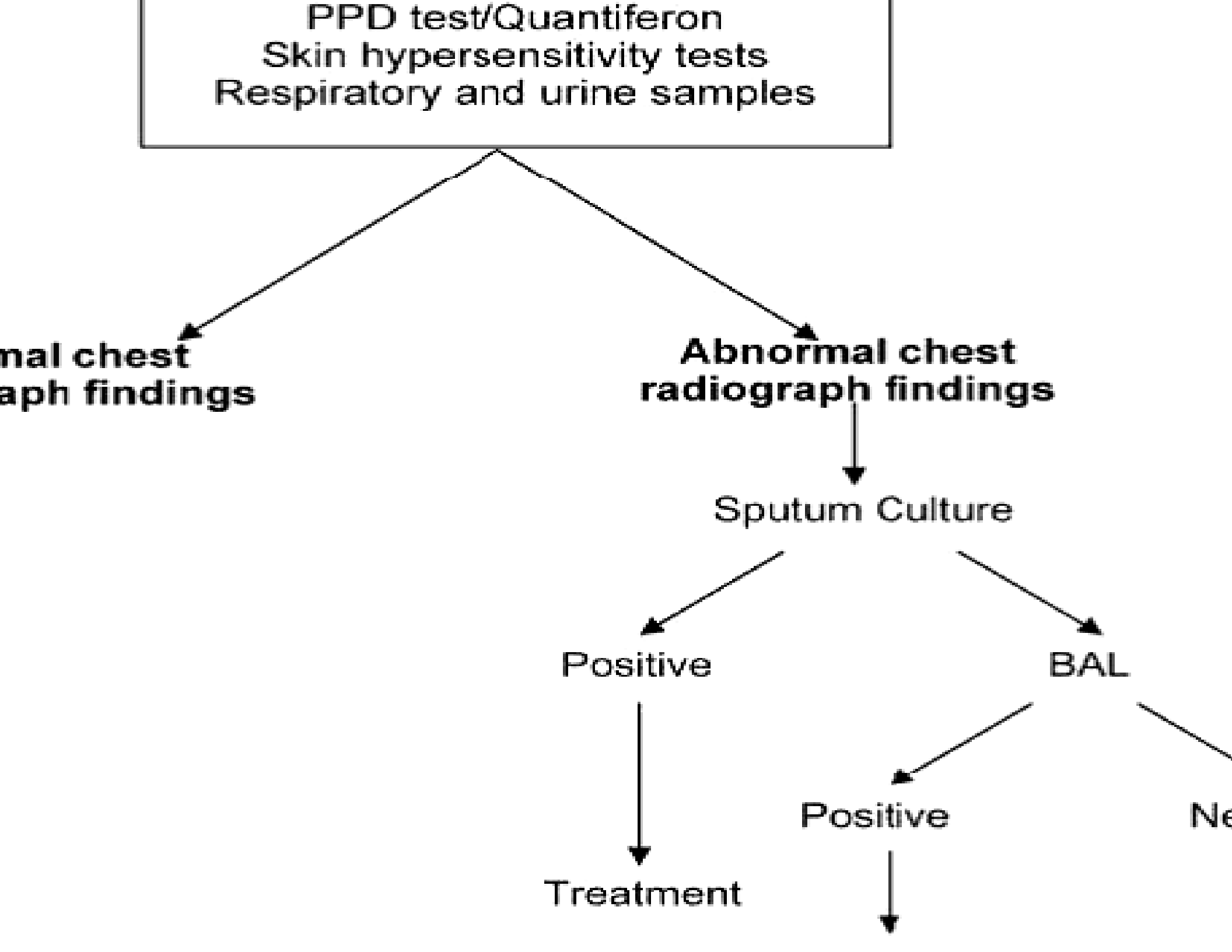
splant exposure history. Consider thoracic imaging a

l therapy for such candidates

uate carefully to exclude active TB before initiating

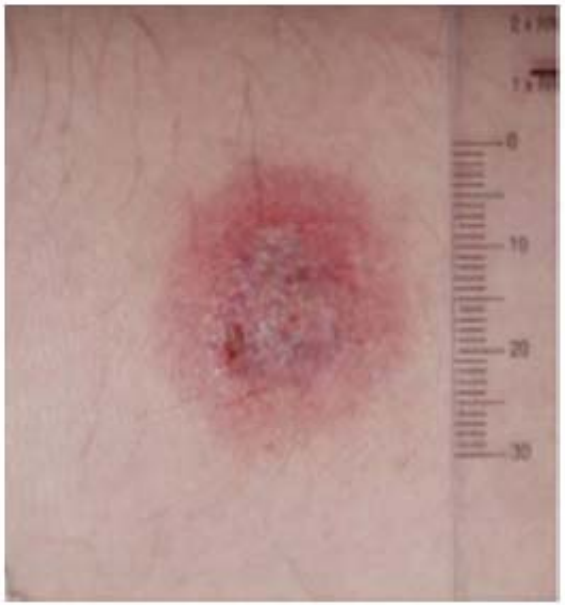
e drug therapy for LTBI.


Normal chest
radiograph findings
Abnormal ch
radiograph find
omatic and/or
ory of TB and/or
e PPD test results
Suggestive symptoms and/or
History of TB and/or
Positive PPD test results and/or an
antation withcut wait
ure if organ availabic
Wait for culture
Negative
Positive
Exclude
extrapulmonary TB
Treatment
Abdominal ultrasound and/or
CT scan and/or
Gallium gammagraphy
Lymph nodes
No lymph nodes


PPD test/Quantiferon
Skin hypersensitivity tests
Respiratory and urine samples
nal chest
aph findings
Abnormal chest
radiograph findings
Sputum Culture
Positive
BAL
Treatment
Positive
Ne

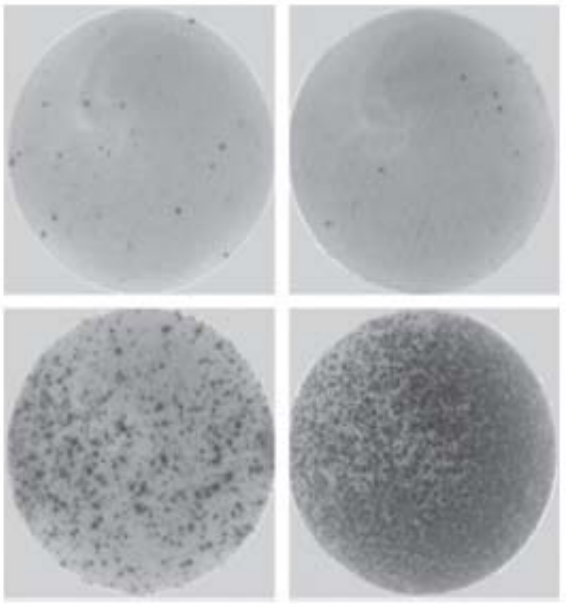
ient with active pulmonary TB could be considered to
date for non-pulmonary SOT if the patient is receiving
eatment and if results of stains for the detection of ac
i in sputum are negative shortly before transplantation

Skin test



ELISA

ELISPOT assay



National guidelines	Transplant specificity	Screening recommendations				
		Who should be screened?	History of previous TB or exposure	CXR	TST	IGRA
Canada 2005 [152]	Renal general screening	All recipients before transplant	Exposure Previous TB not addressed	Yes	All recipients One step	Not addressed
Europe 2002 [153]	Renal general screening	All donors and recipients	Previous TB inadequately treated Exposure	Yes Donor: residual lesions contraindicate lung transplant	All recipients One step	Not addressed
Spain 2009 [30]	Single organ transplant specific TB-related guideline	All donors and recipients Deceased donors: well-founded suspicion of active TB contraindicates donation Residual pulmonary lesions contraindicate lung transplant For lung transplants check donated lung	Previous TB inadequately treated Exposure	Yes	All recipients two step at 7–10 days All donors	Mentioned No specific recommendation
UK 2010 [154]	Renal specific TB-related guideline	All recipients before transplant	Details length and type of previous TB treatment Exposure	Yes	Possibly with IGRA One step	All recipients

gle organ trans- nt specific TB- ated guideline	All donors and recipients Active TB contraindicates donation Residual lung lesions contraindicate lung transplant Deceased donors: history of previous TB and treatment	Details length and type of previous TB treatment History of previous treatment for LTBI Exposure	Yes	All recipients Living donors: interpreted as per CDC guidelines If reliable history treated LTBI: no TST Two step at 2 weeks	For those not highly immunosuppressed
l general trans- ant guideline	All recipients	History of previous TB and treatment	Yes	All recipients Ignore previous BCG	Can use but data sug gests limited detectio of LTBI in CKD stage
CT general guide- line	All recipients Screening donors with TST unnecessary	All patients	Yes	Not routine Include if risks Ignore previous BCG	More useful in immunosuppression Negative, does not exclude LTBI
General LTBI screening and treatment only	All recipients	Not addressed	Not stated	All recipients	For BCG vaccinated To confirm positive TS If negative TST though to be false

D skin test (initial or after a booster effect) with an
ation 5 mm

tory of untreated TB

tory of contact with a patient with active TB

nts with chest radiograph findings compatible with un
apical fibronodular lesions, calcified solitary nodule, ca
n nodes, or pleural thickening)

bients of an organ whose donor has a history of or da