

1 Supplementary data

2 Section I: Search strategy

3 Our search strategy was more sensitive than that used in previous reviews because of our use of the
4 more generic terms “risk factors” and “outcomes” as well as “diabetes”. Previous reviews had
5 explicitly included the term “diabetes” in final search strings, meaning that only studies that mention
6 this term (in the abstract, title or MeSH headings) would have been identified. It might be anticipated
7 that studies which find an important effect of “diabetes” would be more likely to use this word
8 explicitly, whilst those finding little or no effect might mention “diabetes” only in the text or a table.
9 A search relying on the term “diabetes” might thus introduce publication bias and hence overestimate
10 the magnitude of poor treatment outcomes.

- *Scopus: Reference list & Articles cited*

12 Jeon et al. PLoS Medicine 2008, 5(9): e1000260

13 Baker et al. BMC Medicine 2011, 9:81

14

- Global Health Library (including AIM (AFRO), LILACS (AMRO/PAHO), IMEMR (EMRO), IMSEAR (SEARO), WPRIM (WPRO)))

17 1. "Tuberculosis" AND "Diabetes Mellitus"

18 2. "Tuberculosis" AND ("Risk Factors" OR "Treatment Outcome")

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- *EMBASE*

21 1. ‘tuberculosis’/exp

22 2. 'diabetes mellitus'/exp OR 'diabetes'/exp

23 3. 'risk factor'/exp OR 'risk factors'/exp

24 4. ‘outcome’/exp OR ‘outcomes’ OR ‘treatment’/exp OR ‘treatments’

25 #1 AND #2

26 #1 AND (#3 AND #4)

27
28 • MEDLINE

29 MeSH Terms:
30 1. Tuberculosis
31 2. "Diabetes mellitus"

32 Text Terms:
33 3. Outcome(s) OR Treatment(s)
34 4. Risk factor(s)

35 5. Tuberculosis
36 6. "Diabetes mellitus"

37 Search Strings (all inclusive)
38 a)1 AND 2
39 b)1 AND (3 AND 4)
40 c) 5 AND 6

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51 **Supplementary Table S2 Studies reporting outcomes in formats that could not be synthesised with other studies included in the review**

Study	Study type	Country	Study	Total	Population	Sex	Age	New	Type of TB	DM	Exclusion	Reason	Confounders	Findings	
Restrepo[1]	Retrospective	U.S.	2002	469	152	68·9	TBDM	NR	Undifferentiated	Medical	HIV	Time to	Age, sex,	DM	
	Cohort						54·5;		TB	records/		culture	ethnicity		associated
										self-		clearance	(Hispanic or		with
										report		is the	white),		delayed
												only	incarceration,		culture
												outcome	drug abuse,		conversion
												reported	alcoholism,		
													homeless		

52 *mean/median age was calculated from the given age groups distribution

53 Abbreviation: NR-not reported; U.S.-United States of America.

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56 **Supplementary Table S3 Characteristics of studies included in the systematic review of the association between DM and TB treatment outcomes**

Study	Study type	Country	Total N	DM N	Male%	Age (Mean or median)	New TB	% with known outcome (%) ¹	Type of TB	DM diagnosis	Exclusion criteria	Outcome	Confounders
Abdelbary[2]	Retrospective Cohort	Mexico	6310	2121	65.5	43 (SD 16.6)	NR	NR	Pulmonary TB & Extra-pulmonary TB	Glucose testing (unclear whether fasting or not). Not all patients were tested	<18 yrs; repeated TB episodes excluded, as were re-entry, treatment failure, relapse and not). Not all patients were tested	Death/ failure	Age, gender, education level, unemployment status
Alavi-Naini[3]	Retrospective Cohort	Iran	715	108	52.4	TBDM: 56.6(SD12.7) TB only: 44.8(SD18.3)	75.4	NR	Pulmonary TB	FBG	<15yrs, incomplete data	Death	Smoking, drug abuse, drug induced hepatitis, TB history, +ve sputum smear, anemia. Age and sex not included as limited effect in univariate analyses
Alisjahbana[4]	Prospective Cohort	Indonesia	634	94	52.4	TBDM 45.0 (IQR 39.8 to 52.0); TB only	95	NR	Pulmonary TB	FBG	<15yrs, HIV culture conversion	Death, culture conversion	Age, sex, BMI, study site, chest radiograph abnormalities before starting treatment

¹ % Known outcome is defined as the proportion of the initial study group with a known TB treatment outcome includes cured, treatment completed, treatment failure, death, relapse, MDR-TB; unknown outcome includes default, transferred out, not recorded, abandonment/refusal of treatment, loss to follow up, withdrawals due to adverse drug reaction.

Study	Study type	Country	Total	DM N	Male%	Age (Mean or median)	New TB (%)	% with known outcome (%) ¹	Type of TB	DM diagnosis	Exclusion criteria	Outcome	Confounders												
			N																						
Study period (end year)																									
27 (IQR 22-35.0) ²																									
Alo[5]	Retrospective Cohort	Fiji	388	53	57	36.1 ³	NR	86.9	Undifferentiated TB	FBG	NR	Death/failure	None												
				2012																					
Altet[6]	Retrospective Cohort	NR	1622	100			NR			Not stated	NR	Culture conversion	None												
				2014																					
Ambrosetti[7]	Prospective Cohort	Italy	769	32	59.2	NR	82	85.7	Undifferentiated TB	Medical records/ self-report	NR	Death/failure	None												
				1995																					
Ambrosetti[8]	Prospective Cohort	Italy	823	50	56	NR	84	85.3	Undifferentiated TB	Medical records	NR	Death/failure	None												
				1996																					
Ambrosetti[9]	Prospective Cohort	Italy	707	41	56	NR	89	84.7	Undifferentiated TB	Medical records/ self-report	NR	Death/failure	None												
				1997																					

² Median age

³ Mean age calculated from age-group distribution

Abbreviation: IV-intravenous; NR-not reported; NS-not significant; +ve-positive; -ve-negative; ESRD-end stage renal disease; AFB- acid-fast bacillus; DOT-Directly Observed Treatment; COPD- chronic obstructive pulmonary disease; OGTT- oral glucose tolerance test; U.S.-United States of America; R.O.K.-Republic of Korea; K.S.A.-Kingdom of Saudi Arabia.

Study	Study type	Country	Total	DM N	Male%	Age	New TB	% with known outcome (%) ¹	Type of TB	DM diagnosis	Exclusion criteria	Outcome	Confounders
			N			(Mean or median)	(%)						
Amnuaphon[10]	Prospective Cohort	Thailand	4478	290	65	44.8 ²	NR	NR	Undifferentiated TB	Medical records	Transferred in, registration status as "other" (i.e. patients with chronic TB), defaulted, transferred out, changed diagnosis	Death	Age, sex, marital status, nationality, residency, cavity on chest radiograph, directly observed therapy, previous TB treatment, treatment facility, drug resistance, network sites (NS in univariate: cohort period, type of TB, ever received INH prophylaxis, cough lasting>2 weeks at diagnosis, ever used IV drugs, incarcerated, abnormal chest radiograph, initial treatment regimen)
Anunnatsiri[11]	Retrospective Cohort	Thailand	226	38	66.4	47.2 (SD 17.7)	86.3	37.2	Undifferentiated TB	Medical records/ self-report	<15 yrs, incomplete medical records, AFB not identified in the sputum	Death/ failure	Age, HIV, previous TB treatment, under non-pulmonary physician
Atif[12]	Retrospective Cohort	Malaysia	336	131	70.24	49.1 (SD 16.6)	NR	NR	Undifferentiated TB	Medical records	NR	Death	Age, sex, history of >=4 weeks cough, lung cavities, high-

Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N		(Mean or median)		TB (%)	outcome (%) ¹		diagnosis			
													grade sputum, smoking, alcoholism
Baghaei[13]	Prospective Cohort	Iran	64	62	57.2	52.3 (SD 19.9)	100	79.2	Pulmonary TB	FBG and HbA1c	NR	Death, MDR-TB,	Age, sex, smoking, drug use, Hx imprisonment, TB contact, Co-morbidity, Smear grade, lesions
Banu Rekha[14]	Retrospective Cohort	India	190	92	78	TBDM 48.0; TB only 31.0 ¹	NR	NR	Pulmonary TB	FBG and HbA1C	Patients in moribund state or with major systematic illnesses or with abnormal biochemical profile	culture conversion	None
Barss[15]	Retrospective Cohort	Canada	638	150	NR	NR	NR	NR	NR	Medical records and anti-DM treatment	<18 yrs; inadequate chart data	Death/ failure relapse	None
Bashar[16]	Retrospective Cohort	U.S.	155	50	84.5	TBDM 47.1 TB only 41.6 ²	NR	NR	Undifferentiated TB	Medical records	NR	Death, MDR-TB, relapse	For MDR-TB only: HIV and homelessness

Study	Study type	Country	Total N	DM N	Male%	Age (Mean or median)	New TB (%)	% with known outcome (%) ¹	Type of TB	DM diagnosis	Exclusion criteria	Outcome	Confounders
Burgielski[17]	Retrospective Cohort	Poland	137	65	50	NR	50	NR	Pulmonary TB	Medical records	NR	Death	None
						1982							
Burgielski[18]	Retrospective Cohort	Poland	180	90	50	NR	NR	NR	Pulmonary TB	Medical records	NR	Death	None
						1978							
Cavanaugh[19]	Prospective Cohort	Kiribati	275	101	52.4	TBDM 49 (IQR 39-56); TB only 26 (IQR 20-40) ¹	94.2	96.0	Undifferentiated TB	HbA1c	Pregnant women, <18 yrs	Death/ failure	None
						2012							
Centis[20]	Prospective Cohort	Italy	1100	41	61.7	NR	76.6	65.7	Undifferentiated TB	Medical records	NR	Death/ failure	None
						1998							
Centis[21]	Prospective Cohort	Italy	892	40	61.1	NR	78.8	79.3	Undifferentiated TB	Medical records	NR	Death/ failure	None
						1999							
Chang[22]	Prospective Cohort	Taiwan	192	60	74.8	TBDM 57.9 (SD12.8) TB only 57.2 (SD18.8)	61.4	NR	Pulmonary TB	FBG	HIV, previously treated TB, interrupted treatment for 2+ consecutive weeks, died during treatment,	MDR-TB	None
						2005							

Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N		(Mean or median)		TB (%)	outcome (%) ¹		diagnosis			
													transferred out after registration
Chiang[23]	Retrospective Cohort	Taiwan	1127	241	66.0	52.9 ²	93.3	NR	Pulmonary TB	Medical records	NR	Death/failure	None
			2003										
Chiang[24]	Retrospective Cohort	Taiwan	1473	705	74.3	TBDM 59.6 TB only 54.6 ²	86.4	98.2	Pulmonary TB	Medical records/ self-report	Patients with transient hyperglycemia at TB treatment initiation	Death/failure	Age, sex, smear +ve, retreatment, smoking, drug resistance, non-DM-related co-morbidity, DM-related co-morbidity (adjustment only for unfavourable outcomes, not outcomes analysed)
			2010										
Choi[25]	Prospective Cohort	R.O.K.	569	149	84.2	40.1	33.5	NR	Pulmonary TB	Medical records	<20 yrs	Death/failure	Age, sex, BMI, drug susceptibility pattern
			2012										
Da Costa[26]	Retrospective Cohort	Portugal	10465	706	70.4*	47 (mean calculated)	90.2	NR	Pulmonary TB	Not stated	NR	Relapse	None
			2013										

Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N		(Mean or median)		TB (%)	outcome (%) ¹		diagnosis			
		Study period (end year)											
Degner[27]	Retrospective Cohort	Taiwan	1717	699	68.3	61.2 (SD 20.0)	NR	NR	Pulmonary TB	FBG, RBG, HbA1c, medical records and anti-DM treatment	<13 yrs; only drug susceptible PTB were included	Death, culture conversion	Age, sex, chronic kidney disease, cancer, hepatitis C virus infection, history of tobacco use, cavitary disease, treatment adherence
Delgado-Sánchez[28]	Retrospective Cohort	Mexico	11424	29534	64.51	46 (IQR 32-60)	90.8	79	Undifferentiated TB	FBG, OGTT	<20 yrs; other type of TB	Death/ failure MDR-TB	For failure and MDR-TB only: age, sex, previous TB treatment, malnutrition
De Oliveira[29]	Case-control	Brazil	361	27	42.9	42.6 ²	NR	NR	Pulmonary TB	Medical records	Abandon, inmates, relapse after 5 years, patients who did not use H, R, Z, E	Relapse	None
Dooley[30]	Retrospective Cohort	U.S.	297	42	52.9	TBDM 56.5 (SD 15) TB only 39.8 (SD18)	NR	NR	Undifferentiated TB	RBG	Patients not alive at the time of TB diagnosis, initiated TB treatment outside of Maryland, died before DM status could be obtained	Death, culture conversion	Age, sex, foreign birth, HIV (for death only)

Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N			(Mean or median)	TB (%)	outcome (%) ¹		diagnosis			
Dos Santos Feltrin[31]	Retrospective Cohort	Brazil	4141	306	71.3	49.4 (mean calculated)	89.3	83.0	Undifferentiated TB	Not stated	excluded all cases with diagnosis changes, without closure, or those in which the patient was transferred to another state. Also excluded open cases of TB notifications where the municipality was not in the range area. 541 cases without closure were excluded out of 5361 in total therefore 4820 included	Death	None
El Sahly[32]	Case-control	U.S.	744 2000	85	NR	39.3	NR	NR	Undifferentiated TB	Medical records	NR	Recurrence	None (DM was not included in the adjusted multivariate model due to insignificant findings in the univariate analysis)
Faurholt-Jepsen[33]	Prospective Cohort	Tanzania	1205 2008	197	59.2	36.5 (SD12.9)	NR	NR	Pulmonary TB	FBG	<15 yrs, pregnant/lactating women; terminally ill from TB or HIV (judged)	Death	Age, sex, HIV, culture -ve PTB, BMI

Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N		(Mean or median)		TB (%)	outcome (%) ¹		diagnosis			
		Study period (end year)											
											unlikely to survive >48h), suffering from other severe diseases and non-residents of Mwanza City		
Fielder[34]	Retrospective Cohort	U.S.	174	22	71.3	49	NR	NR	Pulmonary TB	Medical records	If smear for acid-fast bacilli was from sputum induction or bronchoalveolar lavage; patients with unavailable medical records, or those lost to follow-up	Death	Age
Fisher-Hoch[35]	Retrospective Cohort (Texas part)	U.S.	1442	401	68.6	TBDM 54.4 TB only 45.8 ²	94.4	NR	Undifferentiated TB	Self-report	Incomplete DM, culture, or sensitivity data	MDR-TB recurrence	Age, sex, drug abuse, alcoholism, HIV, history of previous episode of TB
Fisher-Hoch[35]	Retrospective Cohort (Mexico part)	Mexico	1436	287	72.1	TBDM 51.2 TB only 40.6 ²	NR	NR	Undifferentiated TB	Self-report	Incomplete DM, culture, or sensitivity data	MDR-TB	Age and sex

Study	Study type	Country	Total N	DM N	Male%	Age (Mean or median)	New TB (%)	% with known outcome (%) ¹	Type of TB	DM diagnosis	Exclusion criteria	Outcome	Confounders
Guler[36]	Retrospective Cohort	Turkey	306	44	63.1	42.8 (SD 16.4)	100	NR	Pulmonary TB	Medical records	Patients with TB history, HIV	Culture conversion	None
			2000-05										
Gullón Blanco[37]	Retrospective Cohort	Spain	98	13	78.6	40.5 (SD 1.67)	NR	NR	Pulmonary TB	Medical records	Drug resistance, HIV, lost to follow up, death during TB treatment	Culture conversion	None
			2005										
Hara[38]	Case-control	Japan	394	93	NR	NR	NR	NR	Pulmonary TB	Medical records	NR	Culture conversion	None
			1994										
Hasibi[39]	Retrospective Cohort	Iran	50	6	62	39 (SD 17)	NR	NR	Disseminated TB	Medical records	Patients with single organ involvement	Death	None
			2006										
Horita[40]	Retrospective Cohort	Japan	432	92	68.7	64.9 (SD 19.7)	88.2	NR	Pulmonary TB	Medical records	HIV, MDR-TB, discharged alive before negative infectivity confirmed (including refused treatment or transferred out)	Death	Age, sex, performance status, comorbidities (heart disease, respiratory disease, liver disease, kidney disease, active malignancy), non-standard drug regimen
			2011										

Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N		(Mean or median)		TB (%)	outcome (%) ¹		diagnosis			
Study period (end year)													
Hongguang[41]	Prospective Cohort	China	1126	182	66.7	TBDM 53 (IQR 45-64); TB only 34 (IQR 21-45) ¹	92.2	97.8	Pulmonary TB	FBG, OGTT	patients with incomplete medical records	Death/ failure, MDR-TB	None
Hung[42]	Nested case control	Taiwan	595	165	67.9	52.9	0	N/A	Undifferentiated TB	Medical records	all patients with TB before 1998, HIV, or < 18 were excluded.	Relapse	Age, gender, socio-economic status, and comorbid diseases
Jiménez-Corona[43]	Prospective Cohort	Mexico	1262	374	57.84	TBDM 53.5(SD12.8); TB only 41.9 (SD19.0)	87.9	91.1	Pulmonary TB	Medical records and self-report	NR	Death/ failure, culture conversion, relapse, recurrence	Recurrence and relapse were both adjusted for joint resistance to isoniazid and rifampicin. Recurrence was also adjusted for failure or default and HIV; relapse was also adjusted for smoking and sputum grading.
Kanda[44]	Retrospective Cohort	Japan	NR	NR	69.8	57 (IQR 40-67)	NR	100	Pulmonary TB	History of DM	<18 yrs; retreatment/relapse cases; cases with no positive AFB smear or culture of Mtb; and those with	Culture conversion	Age, sex, smoking status, drinking habit, chest x-ray, sputum smear grading

Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N		(Mean or median)		TB (%)	outcome (%) ¹		diagnosis			
													drug resistant strains were excluded.
Karachunskii[45]	Prospective Cohort	Russia	210	110	NR	NR	NR	NR	Pulmonary TB	Medical records	NR	Culture conversion	None
			NR										
Kitahara[46]	Retrospective Cohort	Japan	520	71	70.8	NR	NR	NR	Pulmonary TB	Medical records	NR	Death, culture conversion	None
			1991										
Ko[47]	Retrospective Cohort	Taiwan	6412	2333	67.1*	60.1 (mean calculated)	100	100	Undifferentiated TB	Medical records, health insurance claims	incomplete information on age or sex; relapse/retreatment cases	Death	Age, sex, comorbidities, site of tuberculosis infection
			2010										
Kourbatova[48]	Case-control	Russia	460	20	71	43 (range 18-88)	NR	NR	Undifferentiated TB	Medical records/ self-report	<18 yrs, re-treatment cases and TB patients in prison	Death	None
			2003										
Lee[49]	Case-control	Taiwan	600	170	72	48.1 ²	NR	NR	Pulmonary TB	FBG	Defaulted, transferred out, died during anti-TB treatment, still on treatment or found to be MDR-TB	Relapse	Age, BMI, sex, indigenous population, history of alcohol use, history of smoking, cancer, ESRD, coexisting extra-pulmonary
			2007										

Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N			(Mean or median)	TB (%)	outcome (%) ¹		diagnosis			
													lesion, initial cavitation, suboptimal regimen, DOT>=60%
Lee[50]	Retrospective Cohort	R.O.K.	764	238	62.5	56 (IQR 30-94)	100	86.4	Pulmonary TB	2012 ADA diagnostic criteria history or RSG ≥ 11.1 mmol/L at time of TB diagnosis. For general population history or FPG ≥ 7.0 mmol/L	NR	Death/ failure, culture conversion	Age, sex, BMI, cavitary disease, retreatment
Leung[51]	Prospective Cohort	Hong Kong	17488	3206	63.6	54.2 (SD 20.6)	90	NR	Pulmonary TB & Extra-pulmonary TB	Not stated	patients with baseline drug resistance	Death/ failure, relapse, culture conversion	Age, gender, Chinese ethnicity, permanent residency, employment status, homeless/overcrowded, alcohol dependence, drug abuse, smoking status, HIC, previous TB treatment

Study	Study type	Country	Total N	DM N	Male%	Age (Mean or median)	New TB (%)	% with known outcome (%) ¹	Type of TB	DM diagnosis	Exclusion criteria	Outcome	Confounders
													Study period (end year)
Lin[52]	Retrospective Cohort	Taiwan	747	182	71.1	59.3 (range 0.3-96)	NR	NR	Undifferentiated TB	Medical records	NR	Death	Matched by age, sex, and site of TB
					2007								
Liu[53]	Retrospective Cohort	China	2459	282	70.5	32.3% were aged 60+	12.3	96.4	Pulmonary TB	Medical records	patients registered twice during the study period	Death	Age, sex
			2015										
Lo[54]	Retrospective Cohort	Taiwan	NR	NR	69.1	66 (IQR 46-77)	100	93.7	Pulmonary TB & Extra-pulmonary TB	Medical records, ICD 9 codes from health insurance claims	patients were previously treated, those with incomplete information, and cases reported after death.	Death	Age, sex, sputum bacteriology, types of TB, residential place, comorbidity (including HIC, chronic kidney disease, stroke, cancer, chronic liver disease and cirrhosis, COPD)
			2008										
Ma[55]	Prospective Cohort	China	1156	157	69.7	NR	100		Pulmonary TB	Repeated FBG	<15 yrs; no other comorbidity.	Death/ failure, culture conversion	Age, sex, education, smoking status, BMI
			2010										
Maâlej[56]	Case-control	Tunisia	142	60	52.8	TB-DM 54.0 (SD 14.4); TB only 32.0 (SD 13.0)	NR	NR	Pulmonary TB	Medical records	Immunosuppression (e.g. HIV, corticosteroids long course, immunosuppressive treatment)	Death, relapse	None
			2000-06										

Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N		(Mean or median)		TB (%)	outcome (%) ¹		diagnosis			
Study period (end year)													
Magee[57]	Retrospective Cohort	U.S.	1318	151	66.5	TB-DM 57.4 (SD14.4); TB only 44.3 (SD17.8)	93.8	NR	Undifferentiated TB	Medical records	<16 yrs	Death	Age, sex, ethnicity, occupation, foreign born, alcoholism, HIV status, and baseline TB culture
Magee[58]	Retrospective Cohort	U.S.	327	42	60.8	41.5 (IQR 30-57)	100	100	Extra-pulmonary TB	Self-report, medical records, random blood glucose.	<16 yrs	Death	Age, sex, foreign-born status, HIV, EPTB site, and ESRD
Mathew[59]	Retrospective Cohort	Russia	1916	44	69.2	42	86.4	NR	Undifferentiated TB	Medical records	<18 yrs, receiving treatment outside of local TB service	Death	Age, sex, TB treatment, MDR, prior incarceration, HIV, alcoholism, narcotic use
Mboussa[60]	Retrospective Cohort	Congo	132	32	60.6	TBDM 46.3 TB only 35.0 ²	NR	90.9	Undifferentiated TB	FBG	HIV	Death/ failure, relapse	None
Mi[61]	Retrospective Cohort	China	580	97	65.6	TBDM 47.4	91.4	89.3	Undifferentiated TB	FBG	NR	Death/ failure	None

Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N		(Mean or median)		TB (%)	outcome (%) ¹		diagnosis			
Study period (end year)													
			2012				TB only	35.5 ²					
Moosazadeh[62]	Prospective Cohort	Iran	964	140	56	42.63	94.3	NR	Pulmonary TB	Medical records/ self-report	Non-Iranian, unsuccessful treatment outcome (treatment failure/discontinued treatment due to death/ wrong diagnosis/ absence of treatment)	Death	Age, previous TB treatment, result of sputum smear after 2 months of treatment, renal disease, cancer
Morsy[63]	Case-control	Egypt	238	40	66.4	30.4 ²	100	NR	Undifferentiated TB	Medical records and self-report	Patients with previous TB history	Failure	Age, sex, family knowledge of TB, missed doses, family size, distance to TB center, walking disability, satisfaction with care, household members <15 years, health education received, patient knowledge of TB
Mundra [64]	Retrospective Cohort	India	187	12	62.9	35 (IQR 25-50)	77.5	91.4	Undifferentiated TB	Limited screening for DM	NR	Death	Age, sex, area of residence, site of TB,
			2014										

Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N		(Mean or median)		TB (%)	outcome (%) ¹		diagnosis			
													(details not given) but 61% of patients were not screened
Nakamura[65]	Retrospective Cohort	Japan	260	69	65.8	TBDM 64.5 (SD15.0) TB only 61.3 (SD21.6)	NR	NR	Pulmonary TB	HbA1c	Incomplete data on sputum bacteriology or DM	Culture conversion	Age, sex, and cavitation
Namukwaya[66]	Case-control	Uganda	150	6	61.3	NR	NR	NR	Pulmonary TB	Surrogate measures	<13 yrs, incomplete records	Failure	None
			2007										
Nandakumar[67]	Retrospective Cohort	India	2794	667	67.9	46 (SD17)	86.9	94.0	Undifferentiated TB	Various objective and subjective measurements	<14 yrs, transfer-in cases	Death/ failure, MDR-TB	Age group, sex, site and type of TB, smear result and HIV status (adjustment was only in all unfavourable outcomes)
Nissapatorn[68]	Retrospective Cohort	Malaysia	1651	241	65.7	TBDM 51.5 (SD12.0) TB only 37.5 (SD15.4)	92.9	80.0	Undifferentiated TB	FBG	< 14 yrs, HIV	MDR-TB	None

Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N			(Mean or median)	TB (%)	outcome (%) ¹		diagnosis			
Orofino[69]	Retrospective Cohort	Brazil	308	14	NR	39	NR	81.2	Undifferentiated TB	Medical records	Discontinued follow-up during the first 15 days of treatment for any reason	Death/ failure	None
				2006									
Oursler[70]	Retrospective Cohort	U.S.	126	18	72	52.6 (SD 17.5)	NR	NR	Pulmonary TB	Medical records	Patients with isolated extra-pulmonary TB	Death	Age, COPD, renal disease, HIV (race, sex, and homelessness, were not associated with death in univariate analyses)
				1996									
Pérez-Navarro[71]	Prospective Cohort	Mexico	NR	NR	66	TBDM 50.7(SD12)	86	NR	Undifferentiated TB	Medical records	<15 yrs, HIV	Relapse	None
				2009									
						TB only 40.7(SD19)							
Pérez-Navarro[72]	Prospective Cohort	Mexico	409	146	65		87	NR	Pulmonary TB	FBG	<15 yrs, HIV	MDR-TB	Age
				2013									

Study	Study type	Country	Total	DM N	Male%	Age (Mean or median)	New TB (%)	% with known outcome (%) ¹	Type of TB	DM diagnosis	Exclusion criteria	Outcome	Confounders
			N										
		Study period (end year)											
Perez-Navarro[73]	Retrospective Cohort	Mexico	324	183	64		90	85	Pulmonary TB	Medical records, FPG test	<15 yrs; patients with T1DM or HIV; relapse patients or those with previous treatment history.	Death/ failure, MDR-TB, relapse	Age, sex, smoking and overcrowding, smear positivity at two months
Pina[74]	Retrospective Cohort	Spain	1511	73	64.4	38.63	NR	NR	Undifferentiated TB	Medical records	Patients with TB diagnosis after death, death from non-adherence, failures, transfer and incomplete medical records	Death	None
Reed[75]	Prospective Cohort	R.O.K.	657	162	83.9	44.5	33.5	NR	Pulmonary TB	FBG	HIV and pregnant women	Death	Age, sex, education, alcohol use, previous TB
Reis-Santos[76]	Retrospective Cohort	Brazil	17750	703	67.1	TBDM 49.2 TB only 37.6 ²	87.7	81.1	Undifferentiated TB	Medical records	HIV, missing information on DM and HIV	Death, MDR-TB	Age, institutionalization, TB form, initial smear, treatment type
Ribeiro Macedo[77]	Retrospective Cohort	Brazil	12795	323	90.7	18+ (NR)	79.5	87.5	Undifferentiated TB	Medical records	Patients who transferred, had a change of diagnosis, aged<18 yrs, subjects with	Death, MDR-TB	Age, sex, ethnicity, education, alcoholism, mental disease, other comorbidities, type of

Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N		(Mean or median)		TB (%)	outcome (%) ¹		diagnosis			
		Study period (end year)											
											missing outcome information (only included the prisoners)		treatment, chest X-Ray, tuberculin skin test, form of TB, sputum smear, sputum culture, histopathology, sputum smear microscopy for the second month of treatment and DOT
Salindri[78]	Prospective Cohort	Georgia	232	36	75.4	49 (IQR 42-58)	100	69	Pulmonary TB	Medical records, HbA1c	<15 yrs; retreatment cases or patients with prior TB history	MDR-TB	Age, sex, socioeconomic status, smoking status, alcohol use, HIV status, kidney disease
Sangral[79]	Retrospective Cohort	India	280	23	65.3	41.83	NR	90.7	Undifferentiated TB	Medical records	<15 yrs, pregnant women	Death/ failure	None
Satung[80]	Retrospective Cohort	Thailand	7250	555	72		100	94	Pulmonary TB	Medical records	relapse/retreatment cases	Death/ failure	None

Study	Study type	Country	Total	DM N	Male%	Age (Mean or median)	New TB (%)	% with known outcome (%) ¹	Type of TB	DM diagnosis	Exclusion criteria	Outcome	Confounders
			N										
		Study period (end year)											
Shahrezaei[81]	Retrospective Cohort	Iran	508	38	49.7		89.2	94	Undifferentiated TB	Medical records	cases that had changes of disease diagnosis	Death	None
Siddiqui[82]	Prospective Cohort	India	150	36	44.6	33	80.7	98.7	Pulmonary TB & Extra-pulmonary TB	Medical records	<15 yrs; suspected or known MDR TB patients; patients who were not willing to participate; patients with other comorbidity	Death/ failure, MDR-TB	None
Singla[83]	Retrospective Cohort	K.S.A	692	187	64.6	TBDM 45.8	NR	73.0	Pulmonary TB	FBG	Patients with extra-pulmonary or miliary TB	Death/ failure, relapse	None
Subhash[84]	Retrospective Cohort	India	361	72	77	TBDM 49.5	NR	NR	Undifferentiated TB	FBG	<12 yrs	MDR-TB	None
Sulaiman[85]	Retrospective Cohort	Malaysia	1256	342	72.3	TBDM 50.7 (SD 13.0) TB only 41.4 (SD 16.5)	92.7	93.6	Undifferentiated TB	Medical records/ self-report	HIV, hepatitis B/C or both, ESRD, immunosuppression due to organ transplantation, cancer, and patients	Death	None

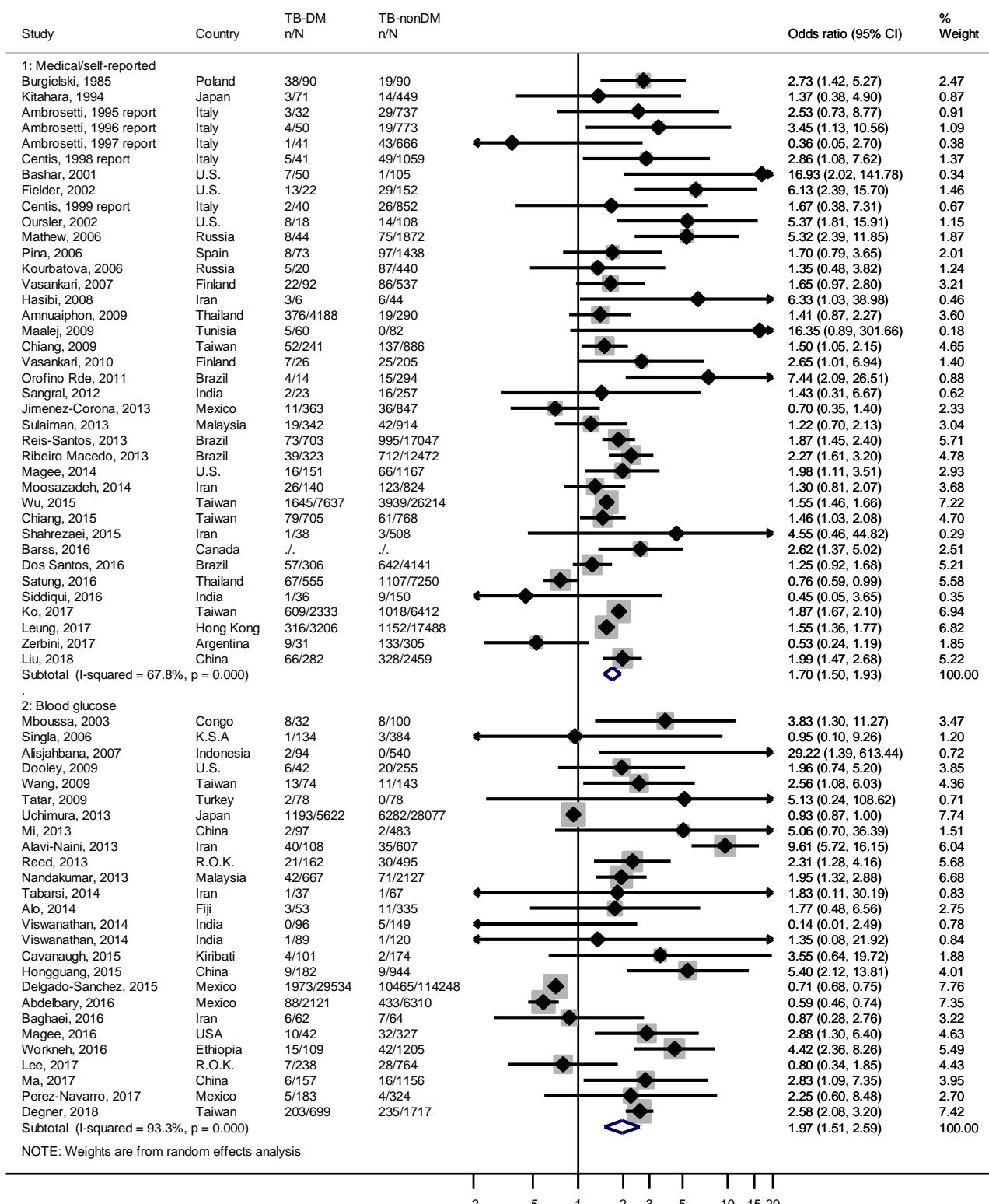
Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N		(Mean or median)		TB (%)	outcome (%) ¹		diagnosis			
with incomplete medical records													
Tabarsi[86]	Prospective Cohort	Iran	104	37	51.4	TBDM 62.9 (SD13.6) TB only 45.3 (SD22.3)	NR	100	Undifferentiated TB	FBG HbA1c	<15 yrs	Death/failure	None
Tatar[87]	Retrospective Cohort	Turkey	156	78	62.8	TBDM 53.6 (SD 12.7) TB only 34.2 (SD 14.8)	NR	91.0	Undifferentiated TB	BG	TB-non DM group included patients without any other underlying disease	Death	None
Tipayamongkhulgul [88]	Retrospective Cohort	Thailand	NR	NR	NR	NR	NR	N/A	Pulmonary TB	Medical records	patients with TB drug resistance and uncompleted comorbidity data	Relapse	Age, sex sputum conversion, treatment outcome of previous treatment
Touré[89]	Retrospective Cohort	Senegal	174	86	NR	51.5 (Range 19-80)	NR	NR	Pulmonary TB	FBG	HIV, previous PTB, immunosuppressive treatment (including long term use of corticosteroids)	Death	Matched for age and sex

Study	Study type	Country	Total	DM N	Male%	Age	New TB (%)	% with known outcome (%) ¹	Type of TB	DM diagnosis	Exclusion criteria	Outcome	Confounders
			N	Study period (end year)	(Mean or median)								
Uchimura[90]	Retrospective Cohort	Japan	33699	5622	63.2	69 ¹	NR	92.1	Pulmonary TB	Various objective and subjective measurements	Treatment outcome unevaluated	Death/ failure	None
				2010									
Vasankari[91]	Retrospective Cohort	Finland	629	92	61.4	54.1 ²	90.6	NR	Pulmonary TB	Medical records/ self-report	NR	Death	None
				1996									
Vasankari[92]	Retrospective Cohort	Finland	230	25	42.0	70.1 ¹	NR	81.8	Extra-pulmonary TB	Medical records	Previous TB treatment, PTB patients	Death	None
				1996									
Velayutham[93]	Prospective Cohort	India NR	885	223	72	41	100	91.6	Pulmonary TB	FCG, self-report	<18 yrs; patient with previous treatment, unavailable smear results, and those with refused consent.	Relapse	None

Study	Study type	Country	Total	DM N	Male%	Age (Mean or median)	New TB (%)	% with known outcome (%) ¹	Type of TB	DM diagnosis	Exclusion criteria	Outcome	Confounders
			N										
Viswanathan[94]	Retrospective Cohort	India	245	96	74.3	TBDM 49.9 (SD11.3); TB only 37.5 (SD13.6)	NR	99.6	Pulmonary TB	FBG, HbA1c	Pre-DM	Death/ failure, MDR-TB	None
Viswanathan[95]	Prospective Cohort	India	209	89	76.1	TBDM 50 TB only 48 ¹	84.7	97.6	Undifferentiated TB	OGTT	HIV, impaired glucose test or impaired fasting glucose on OGTT	Death/ failure	Age, sex, smoking, alcohol, adherence
Wada[96]	Retrospective Cohort	Japan	726	143	75.8	TBDM 46.5 TB only 41.6	NR	NR	Undifferentiated TB	Medical records	>80 yrs	Culture conversion, Relapse	None
Wang[97]	Retrospective Cohort	Taiwan	453	75	73.3	NR	NR	NR	Pulmonary TB	Medical records	NR	MDR-TB	None
Wang[98]	Retrospective Cohort	Taiwan	217	74	72.4	TBDM 60.8 (SD 9.9) TB only 59.1 (SD 17.2)	88.5	92.6	Pulmonary TB	FBG and treatment	<18 years old, non-Taiwanese, already diagnosed with TB in another hospital, if chest radiograph done at presentation missing or no clear data on	Death	Age and sex

Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N			(Mean or median)	TB (%)	outcome (%) ¹		diagnosis			
													bacteriology and DM history
Wang[99]	Retrospective Cohort	Taiwan	55883	12688	NR	TBDM 65.8 (SD13.5)	NR	NR	Pulmonary TB	Medical records	Patients received any non-first line anti-TB drugs for > 14 days (to avoid inclusion of patients with drug-resistant TB or adverse reaction due to first line anti-TB drugs); DM visit claim within 270 days before parturition	Recurrence	None
Workneh[100]	Prospective Cohort	Ethiopia	1205	109	52.7	35.74 (SD 15.2)	NR	98.9	Undifferentiated TB	Medical records, self-report, RBG or FBG	<15 yrs; retreatment cases, patients who could not offer informed consent, known or suspected MDRTB cases, those with malignancy and patients who were on immunosuppressive therapy	Death/ failure	None

Study	Study type	Country	Total	DM N	Male%	Age	New	% with known	Type of TB	DM	Exclusion criteria	Outcome	Confounders
			N		(Mean or median)		TB (%)	outcome (%) ¹		diagnosis			
		Study period (end year)											
Wu[101]	Retrospective Cohort	Taiwan 2008	33851	7637	74.6	NR	100	NR	Undifferentiated TB	Medical records	Previous treatment	Death	Stratified by age groups. Sex, residence of living (eastern or not), comorbidity (HIV, chronic kidney diseases, stroke, cancer, liver disease)
Wu[102]	Retrospective Cohort	China 2008	161	40	64.2	45.8% were aged 50+	NR	100	Pulmonary TB	Medical records	patients who were infected with non-tuberculosis mycobacteria	Culture conversion	None
Zerbini[103]	Case-Control	Argentina 2013	305	31	65	58	85.9	NR	Undifferentiated TB	Medical records	<18 yrs	Death	None
Zhang[104]	Retrospective Cohort	China 2009	2141	203	76.2	42.7	NR	75.0	Pulmonary TB	FBG	NR	MDR-TB, relapse	None



58

59 **Supplementary Figure S1 Association between DM and death among TB patients by method of identifying DM**60 Note: Barss 2016: numbers of observations were not reported in original publication; abbreviation: U.S.- United States of America; K.S.A.-
61 Kingdom of Saudi Arabia; R.O.K.- Republic of Korea

62

63 **Supplementary data Section II Meta-regression analyses results output (death)**

64 **Note: the following analyses were performed for studies that reported with unadjusted estimates.**

65 **Study design (cohort or case-control)**

Meta-regression
REML estimate of between-study variance
% residual variation due to heterogeneity
Proportion of between-study variance explained
With Knapp-Hartung modification

	Number of obs = 64
tau2	= .3019
I-squared_res	= 93.37%
Adj R-squared	= 2.52%

logOR	exp(b)	Std. Err.	t	P> t	[95% Conf. Interval]
_Istudydesi_2	.5517714	.2754316	-1.19	0.238	.2034241 1.496635
_cons	1.936348	.1780782	7.19	0.000	1.61118 2.327143

66

67

68 **Diabetes diagnosis (self/medical report or lab tests involved)**

Meta-regression
REML estimate of between-study variance
% residual variation due to heterogeneity
Proportion of between-study variance explained
With Knapp-Hartung modification

	Number of obs = 64
tau2	= .3167
I-squared_res	= 87.30%
Adj R-squared	= -2.24%

logOR	exp(b)	Std. Err.	t	P> t	[95% Conf. Interval]
_Idmdefinit_2	1.085257	.2064188	0.43	0.669	.7420093 1.587287
_cons	1.846356	.2123095	5.33	0.000	1.4672 2.323495

69

70

71 **Income level (high or low)**

Meta-regression
REML estimate of between-study variance
% residual variation due to heterogeneity
Proportion of between-study variance explained
With Knapp-Hartung modification

	Number of obs = 64
tau2	= .3079
I-squared_res	= 90.16%
Adj R-squared	= 0.60%

logOR	exp(b)	Std. Err.	t	P> t	[95% Conf. Interval]
_Iincome2_2	.8601882	.1566755	-0.83	0.411	.5976808 1.237992
_cons	2.044669	.2603264	5.62	0.000	1.585228 2.63727

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77 Note: the studies below included are a mixture of those reported with unadjusted estimates and those with
78 adjusted ones: i.e. 1) some studies reported only adjusted estimates were further included in these analyses; and
79 2) studies reported both unadjusted and adjusted results, their unadjusted results were replaced by the adjusted
80 results)

81

82 Study design (cohort or case-control)

Meta-regression
REML estimate of between-study variance
% residual variation due to heterogeneity
Proportion of between-study variance explained
With Knapp-Hartung modification

	Number of obs	=	71
tau2	=	.2605	
I-squared_res	=	90.78%	
Adj R-squared	=	0.89%	

logOR	exp(b)	Std. Err.	t	P> t	[95% Conf. Interval]
_Istudydesi_2	.6278328	.3126281	-0.93	0.353	.2325011 1.695364
_cons	1.667045	.1435987	5.93	0.000	1.403836 1.979603

83

84 Diabetes diagnosis (self/medical report or lab tests involved)

Meta-regression
REML estimate of between-study variance
% residual variation due to heterogeneity
Proportion of between-study variance explained
With Knapp-Hartung modification

	Number of obs	=	71
tau2	=	.2718	
I-squared_res	=	84.95%	
Adj R-squared	=	-3.42%	

logOR	exp(b)	Std. Err.	t	P> t	[95% Conf. Interval]
_Idmdefinit_2	1.083472	.1947012	0.45	0.657	.7570522 1.550636
_cons	1.604018	.1700993	4.46	0.000	1.298171 1.981922

85

86 Income level (high or low)

Meta-regression
REML estimate of between-study variance
% residual variation due to heterogeneity
Proportion of between-study variance explained
With Knapp-Hartung modification

	Number of obs	=	71
tau2	=	.265	
I-squared_res	=	86.79%	
Adj R-squared	=	-0.83%	

logOR	exp(b)	Std. Err.	t	P> t	[95% Conf. Interval]
_Income2_2	.8994655	.1534577	-0.62	0.537	.6399841 1.264154
_cons	1.733724	.2068287	4.61	0.000	1.366538 2.199574

89

90 Confounding adjustment (3-level: no, adjusted, and appropriately adjusted)

Meta-regression
 REML estimate of between-study variance
 % residual variation due to heterogeneity
 Proportion of between-study variance explained
 Joint test for all covariates
 With Knapp-Hartung modification

	Number of obs	=	71
tau2	=	.2584	
I-squared_res	=	90.63%	
Adj R-squared	=	1.69%	
Model F(2, 68)	=	1.51	
Prob > F	=	0.2284	

logOR	exp(b)	Std. Err.	t	P> t	[95% Conf. Interval]
_Iadjusted_1	.8857106	.1604927	-0.67	0.505	.6169617 1.271527
_Iadjusted_2	1.688196	.6067596	1.46	0.150	.8240396 3.45858
_cons	1.657873	.1791276	4.68	0.000	1.336336 2.056774

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94

95 Confounding adjustment (2-level: no, and adjusted)

Meta-regression
 REML estimate of between-study variance
 % residual variation due to heterogeneity
 Proportion of between-study variance explained
 With Knapp-Hartung modification

	Number of obs	=	71
tau2	=	.2704	
I-squared_res	=	90.65%	
Adj R-squared	=	-2.90%	

logOR	exp(b)	Std. Err.	t	P> t	[95% Conf. Interval]
_Iadjusted2_1	.9786785	.1716348	-0.12	0.903	.6897585 1.388619
_cons	1.662845	.1829883	4.62	0.000	1.335086 2.071068

96

97

98 All multi-variable meta-regression including all four factors above

Meta-regression
 REML estimate of between-study variance
 % residual variation due to heterogeneity
 Proportion of between-study variance explained
 Joint test for all covariates
 With Knapp-Hartung modification

	Number of obs	=	71
tau2	=	.2826	
I-squared_res	=	83.83%	
Adj R-squared	=	-7.53%	
Model F(4, 66)	=	0.39	
Prob > F	=	0.8162	

logOR	exp(b)	Std. Err.	t	P> t	[95% Conf. Interval]
studydesign	.8729163	.1623646	-0.73	0.468	.6021302 1.265478
dmdefinition	.9048804	.1354868	-0.67	0.507	.6710605 1.220171
income	1.011685	.1233043	0.10	0.924	.7931646 1.290408
adjusted	1.05402	.1598748	0.35	0.730	.7786222 1.426826
_cons	2.412357	1.364483	1.56	0.124	.779816 7.462613

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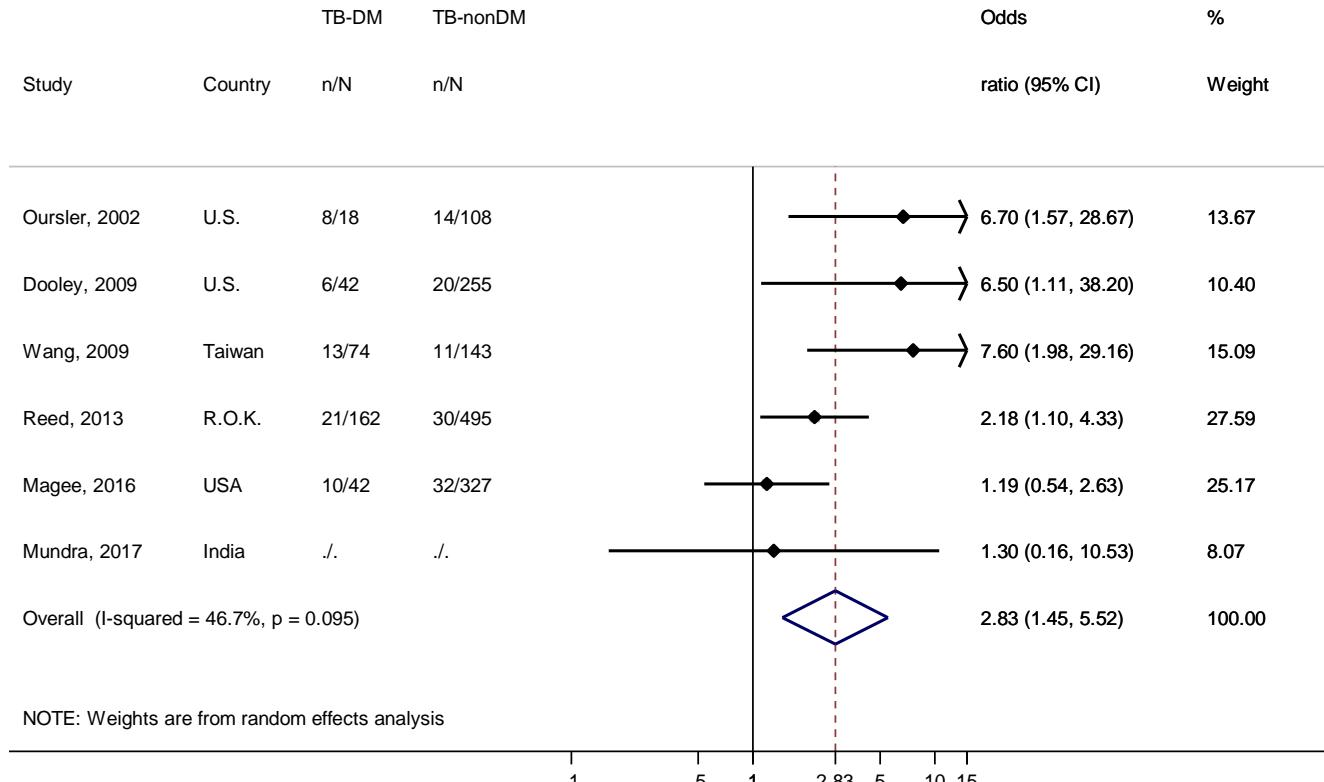
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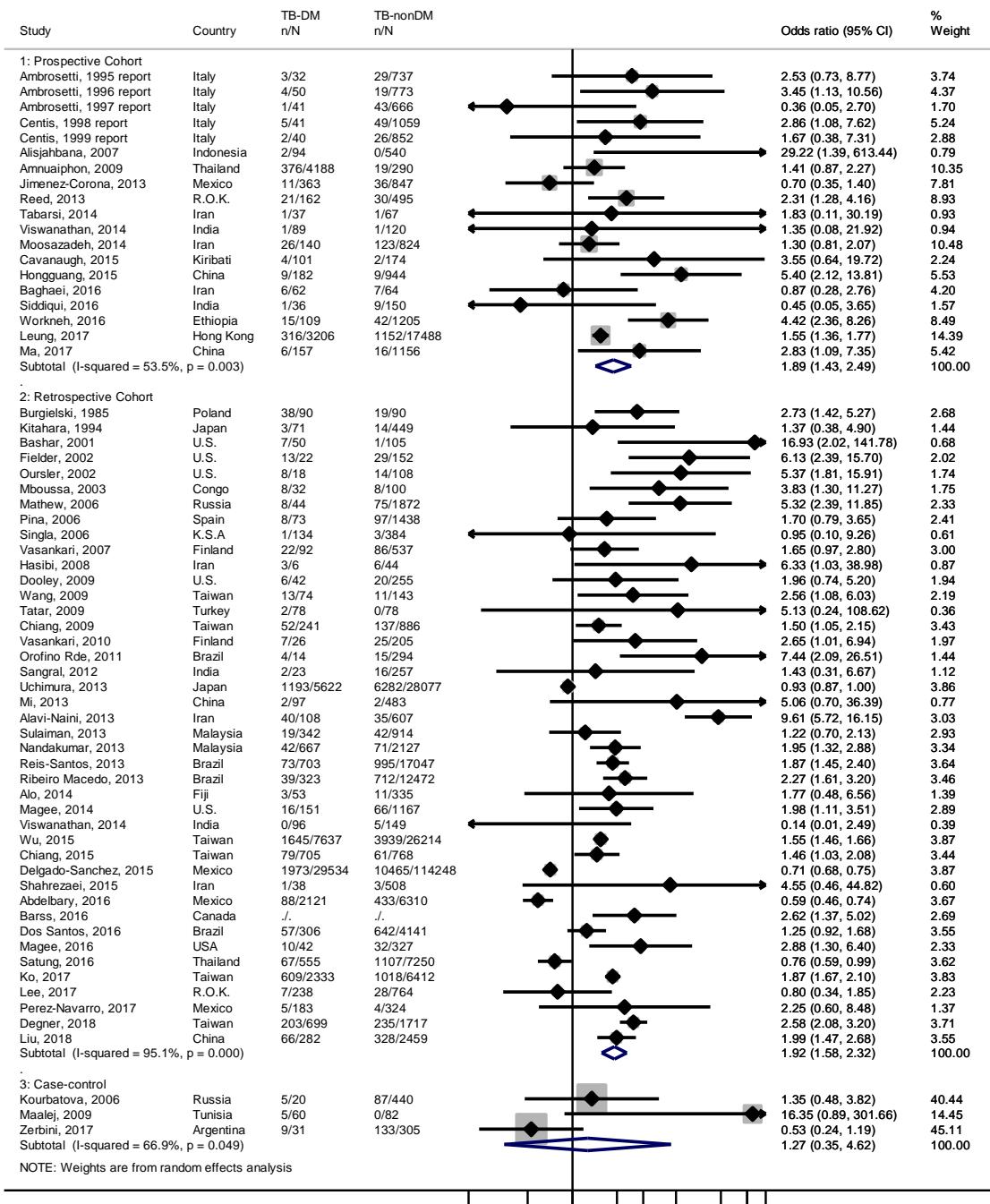


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107 **Supplementary Figure S2 Sensitivity analysis: association between DM and death among TB patients among**
 108 **adjusted studies without potential for over-adjustment**

109 *Note: studies included in adjusted and unadjusted analyses were not mutually exclusive (i.e. some studies reported both unadjusted and
 110 adjusted estimates); Mundra 2017: numbers of observations were not reported in original publication; abbreviation: U.S.- United States of
 111 America; R.O.K.- Republic of Korea

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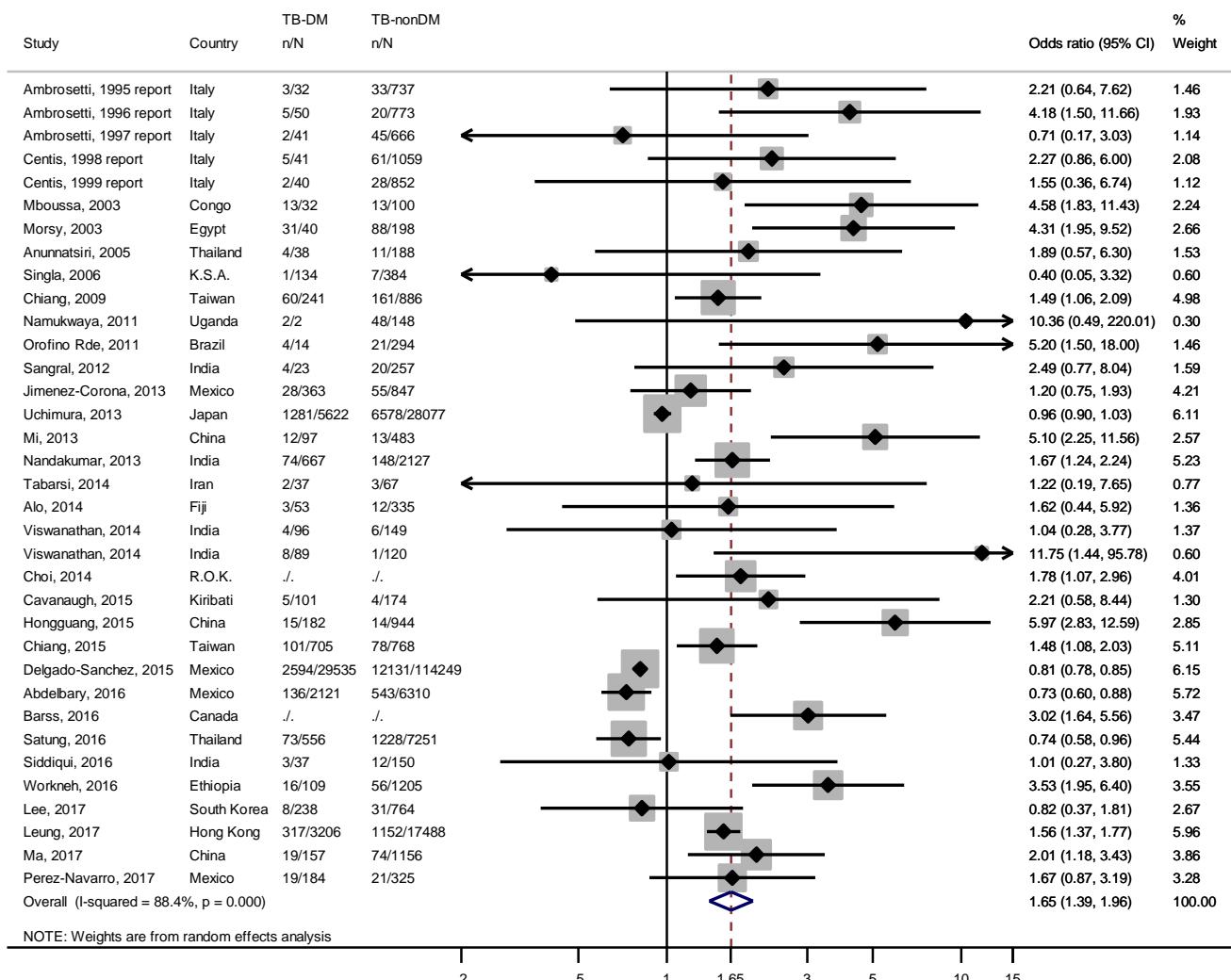
114 **Supplementary Figure S3 Association between DM and death among TB patients by study design (Barss 2016:**115 *numbers of observations were not reported in original publication; abbreviation: U.S.- United States of America;*116 *K.S.A.- Kingdom of Saudi Arabia; R.O.K.- Republic of Korea)*

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122 Supplementary Figure S4 Association between DM and treatment failure and death among TB patients

123 Note: Choi 2014: numbers of observations were not reported in original publication; abbreviation: K.S.A.- Kingdom of Saudi Arabia; R.O.K.-
124 Republic of Korea

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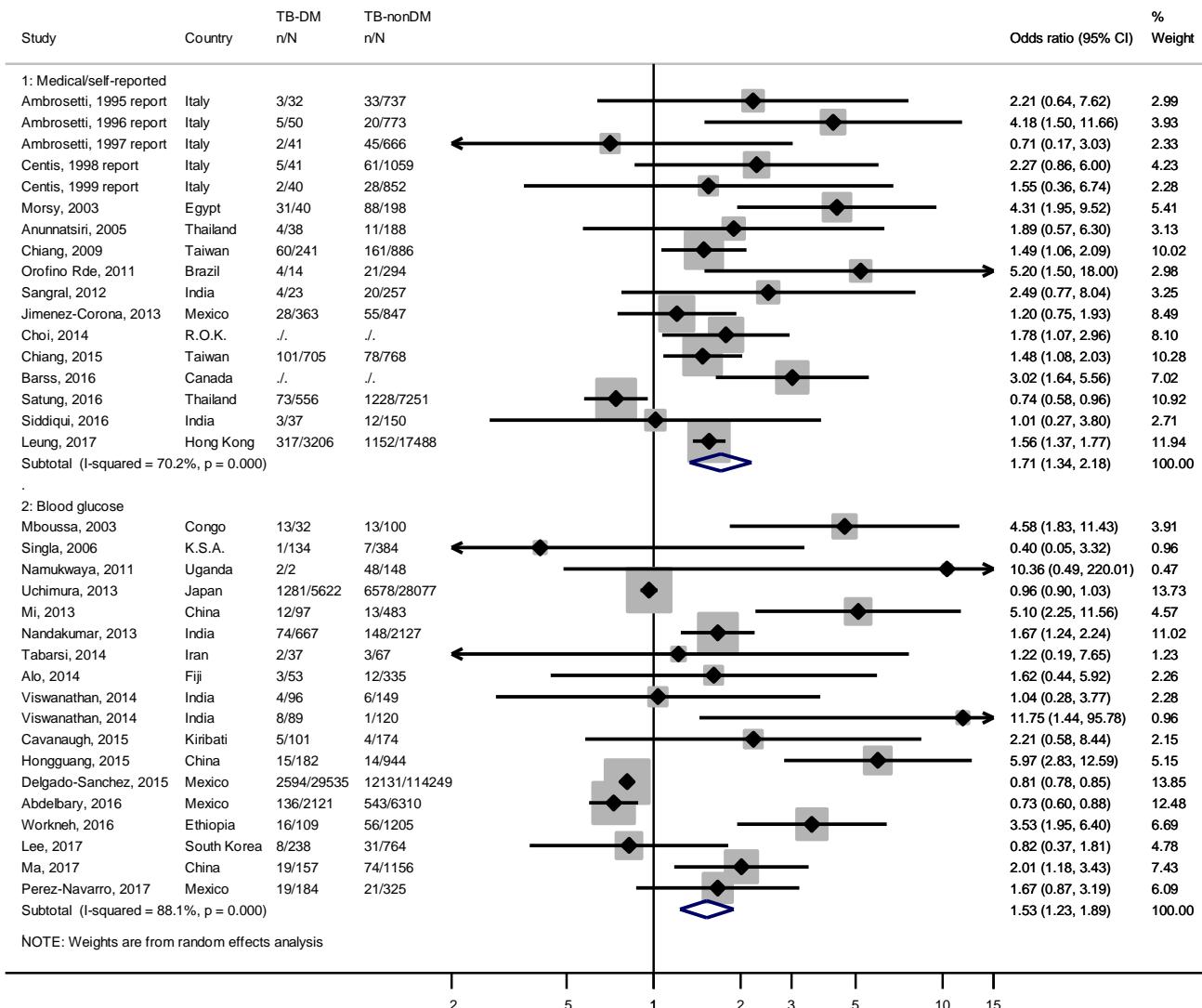
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132 **Supplementary Figure S5 Association between DM and treatment failure and death among TB patients by method**
 133 **of identifying DM**

134 Note: Choi 2014: numbers of observations were not reported in original publication; abbreviation: K.S.A.- Kingdom of Saudi Arabia; R.O.K.-
 135 Republic of Korea

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139 **Supplementary data Section III Meta-regression analyses results output (death and failure)**

140 **Note: the following analyses were performed for studies that reported with unadjusted estimates.**

141 **Study design (cohort studies or case-control study)**

Meta-regression
REML estimate of between-study variance
% residual variation due to heterogeneity
Proportion of between-study variance explained
With Knapp-Hartung modification

	Number of obs = 35
tau2	= .2665
I-squared_res	= 88.07%
Adj R-squared	= 6.68%

logOR	exp(b)	Std. Err.	t	P> t	[95% Conf. Interval]
_Istudydesi_2	2.870601	1.779792	1.70	0.098	.8131074 10.13439
_cons	1.692507	.1952227	4.56	0.000	1.338486 2.140165

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143

144 **Diabetes diagnosis (self/medical report or lab tests involved)**

Meta-regression
REML estimate of between-study variance
% residual variation due to heterogeneity
Proportion of between-study variance explained
With Knapp-Hartung modification

	Number of obs = 35
tau2	= .2986
I-squared_res	= 83.23%
Adj R-squared	= -4.57%

logOR	exp(b)	Std. Err.	t	P> t	[95% Conf. Interval]
_Idmdefinit_2	.9743835	.2300298	-0.11	0.913	.6027498 1.575153
_cons	1.790608	.2986348	3.49	0.001	1.275377 2.513983

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146

147 **Income level (high or low)**

Meta-regression
REML estimate of between-study variance
% residual variation due to heterogeneity
Proportion of between-study variance explained
With Knapp-Hartung modification

	Number of obs = 35
tau2	= .3005
I-squared_res	= 86.17%
Adj R-squared	= -5.24%

logOR	exp(b)	Std. Err.	t	P> t	[95% Conf. Interval]
_Iincome2_2	1.245519	.3016481	0.91	0.371	.7609556 2.038644
_cons	1.547729	.2919459	2.32	0.027	1.054452 2.271764

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153 **All three factors**

Meta-regression
 REML estimate of between-study variance
 % residual variation due to heterogeneity
 Proportion of between-study variance explained
 Joint test for all covariates
 With Knapp-Hartung modification

Number of obs	=	35
tau2	=	.2607
I-squared_res	=	81.95%
Adj R-squared	=	8.71%
Model F(3, 31)	=	1.75
Prob > F	=	0.1765

logOR	exp(b)	Std. Err.	t	P> t	[95% Conf. Interval]
studydesign	.8310749	.1735129	-0.89	0.382	.5428905 1.272237
dmdefinition	1.122304	.1787751	0.72	0.474	.8109923 1.553116
income	1.344283	.1794565	2.22	0.034	1.023875 1.76496
_cons	1.119769	.600312	0.21	0.834	.3752109 3.34181

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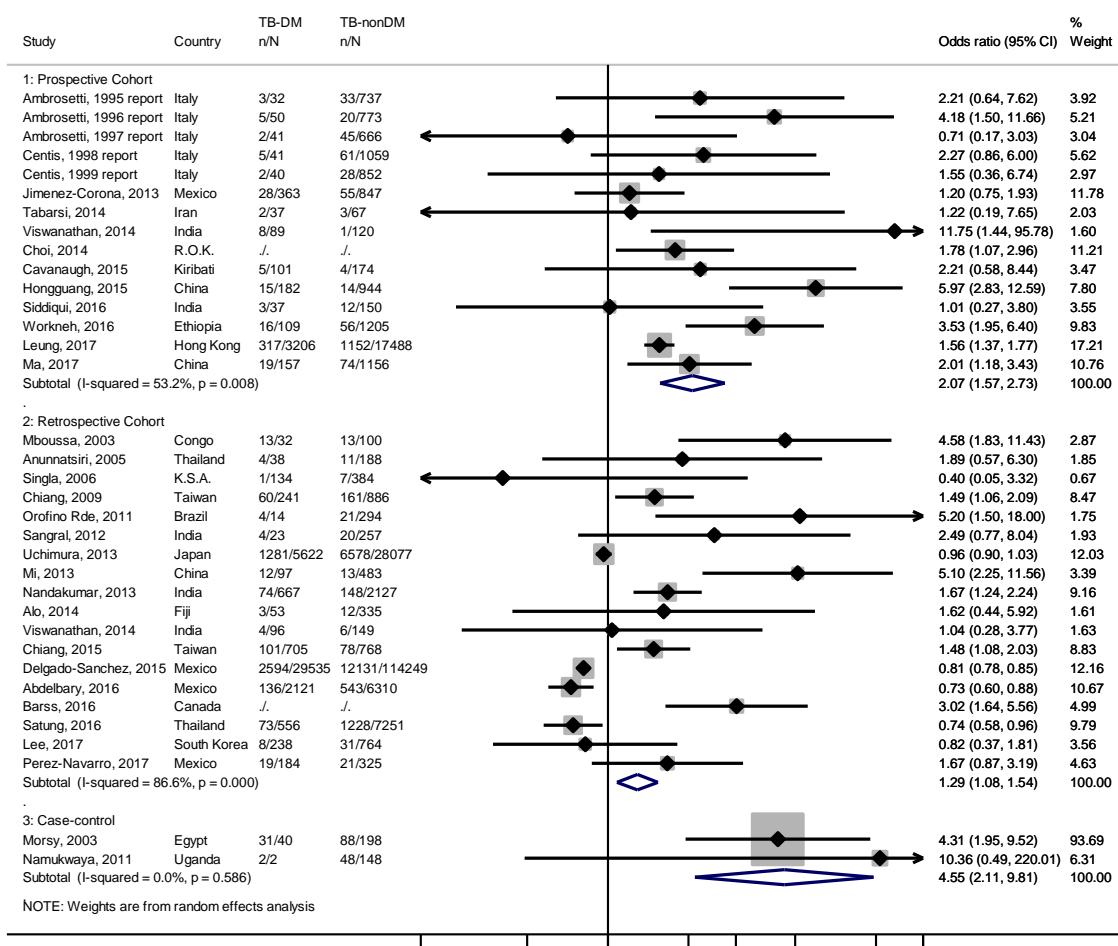
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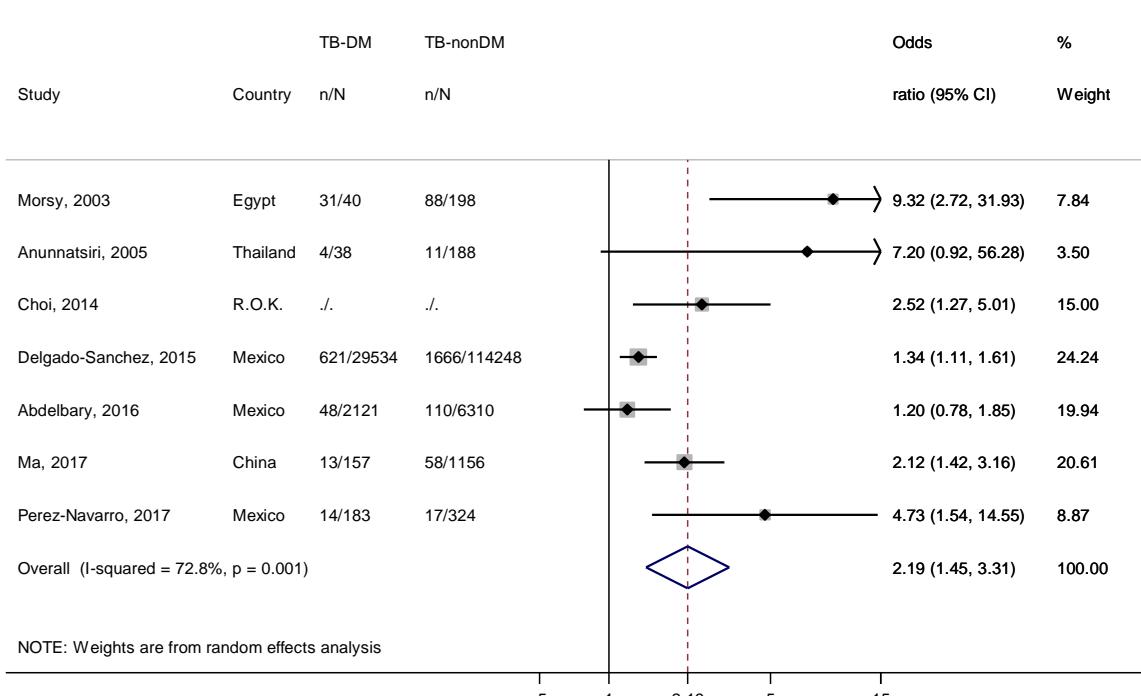
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163 **Supplementary Figure S6 Association between DM and death and treatment failure among TB patients by study**164 **design (Choi 2014: numbers of observations were not reported in original publication; abbreviation: K.S.A.- Kingdom
165 of Saudi Arabia; R.O.K.- Republic of Korea)**

166



167

168 **Supplementary Figure S7 The association between diabetes and “death and failure” or “failure” among adjusted**
 169 **estimates (Choi 2014: numbers of observations were not reported in original publication; abbreviation: R.O.K.-**
 170 **Republic of Korea)**

171 *Note: studies included in adjusted and unadjusted analyses were not mutually exclusive (i.e. some studies reported both unadjusted and
 172 adjusted estimates)

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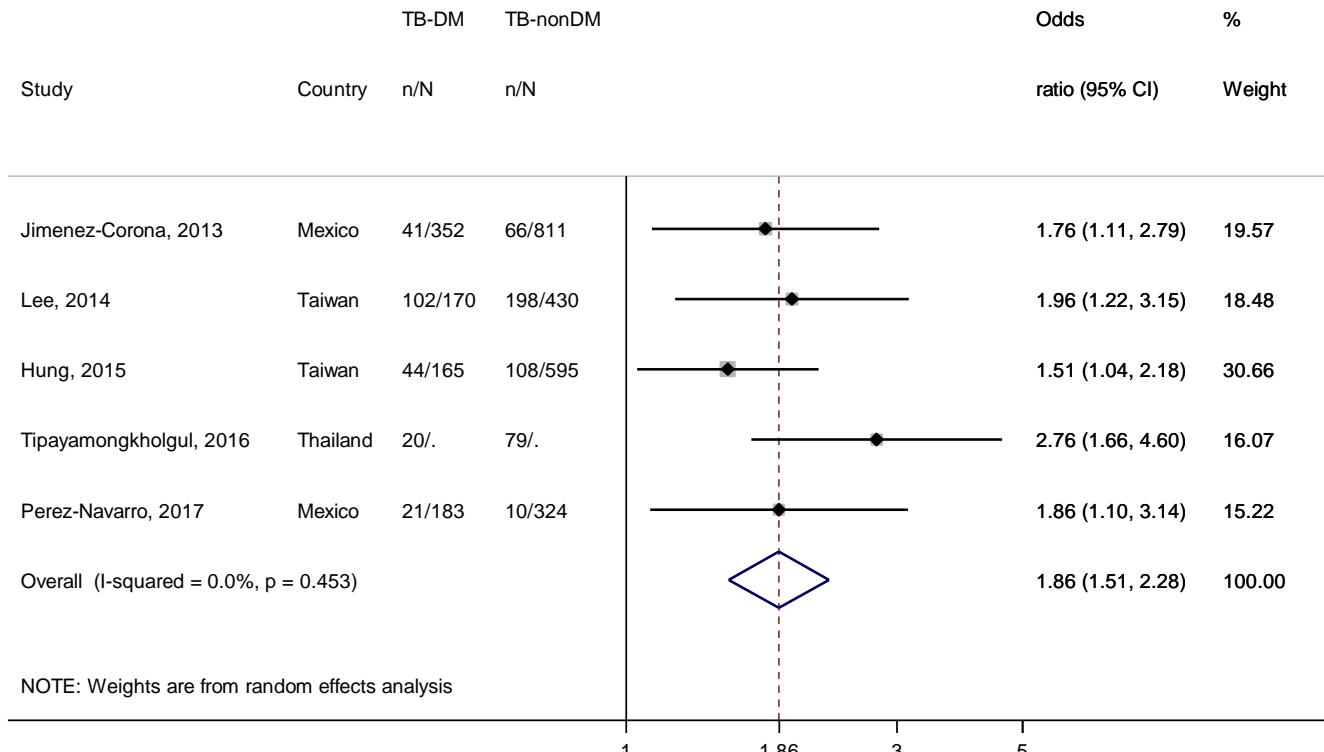
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186 **Supplementary Figure S8 Association between DM and relapse (relapse and recurrence) among TB patients in
187 adjusted studies**

188 *Note: studies included in adjusted and unadjusted analyses were not mutually exclusive (i.e. some studies reported both unadjusted and
189 adjusted estimates); Tipayamongkhogul 201: total number of observations were not reported in the original publication.

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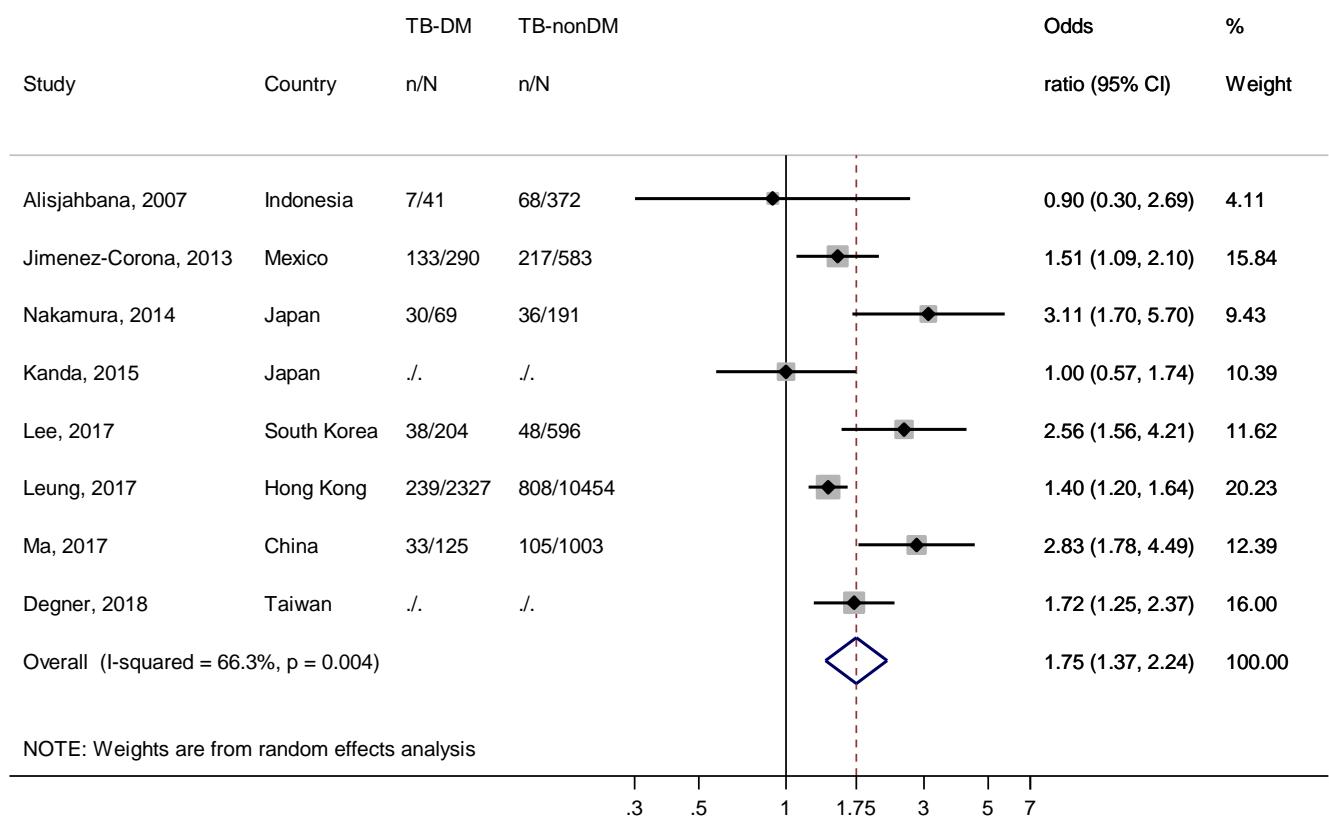
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198 **Supplementary Figure S9 Association between DM and culture remaining positive at 2-3 months of treatment
199 among TB patients in adjusted studies**

200 *Note: studies included in adjusted and unadjusted analyses were not mutually exclusive (i.e. some studies reported both unadjusted and
201 adjusted estimates); Kanda 2015, Degner 2018: numbers of observations were not reported in original publication.

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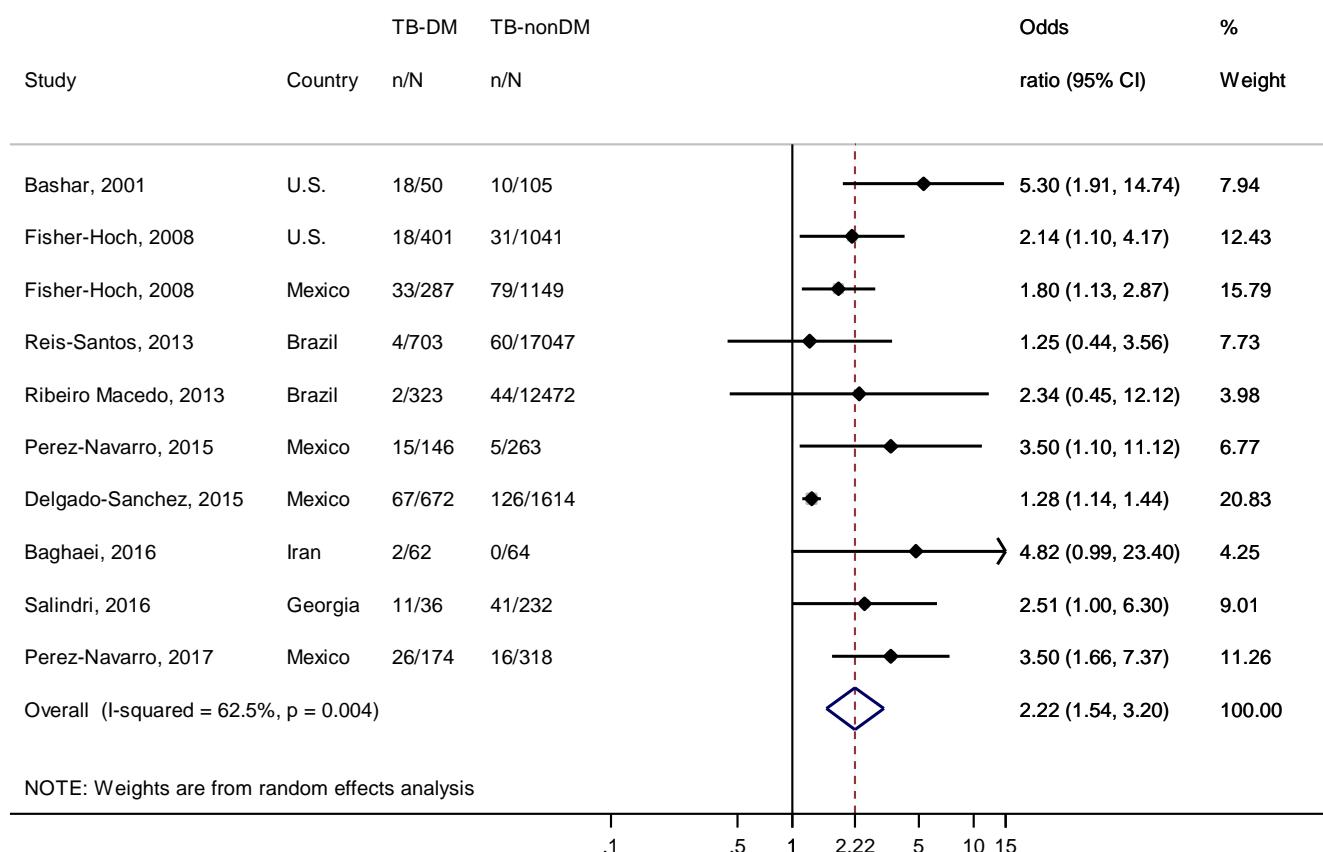
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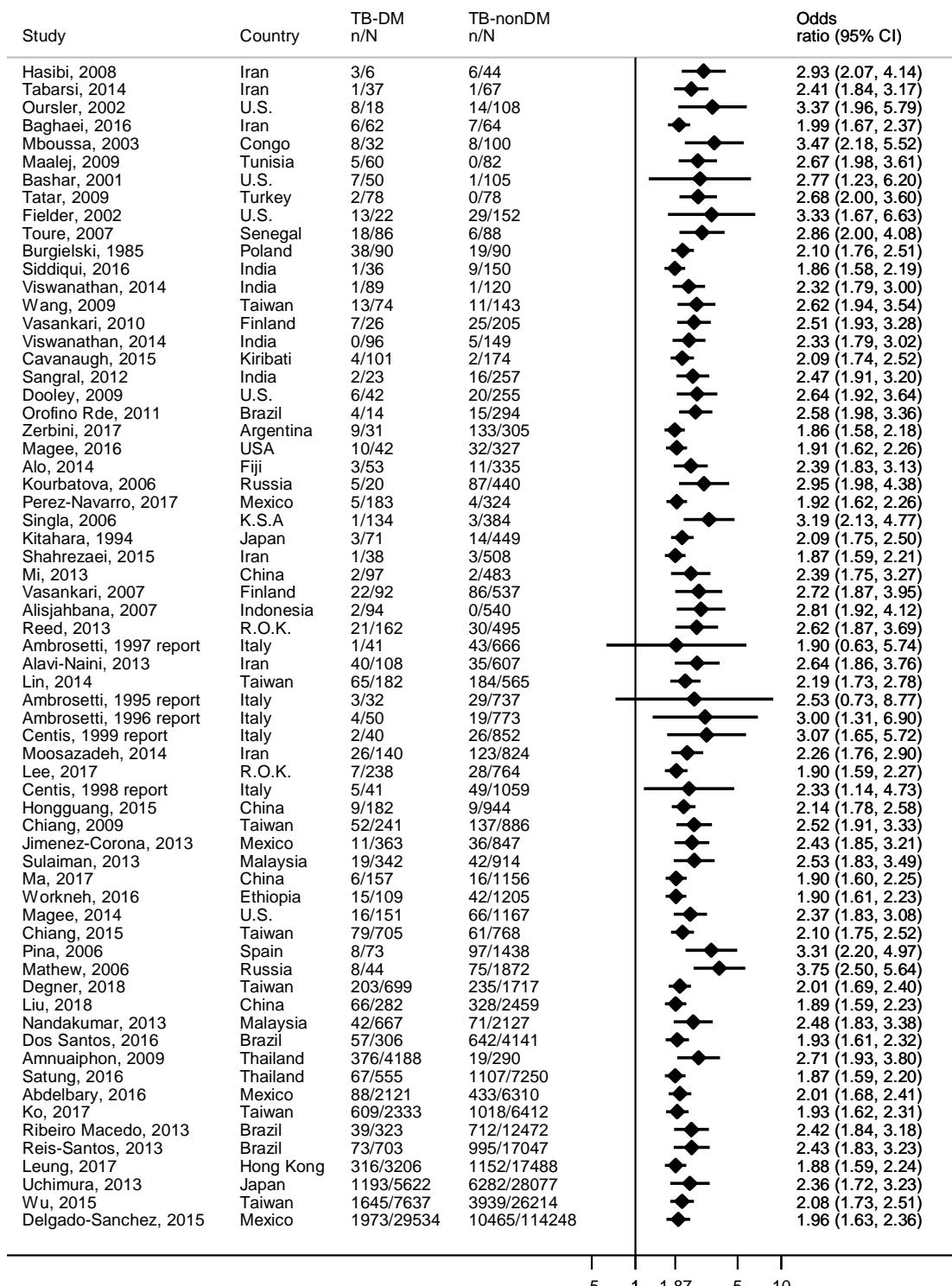
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210 **Supplementary Figure S10 Association between DM and MDR-TB among TB patients in adjusted studies**211 *Note: studies included in adjusted and unadjusted analyses were not mutually exclusive (i.e. some studies reported both unadjusted and
212 adjusted estimates); abbreviation, U.S.- United States of America.



219

220 Supplementary Figure S11 Cumulative meta-analysis for death

221

222 **Supplementary Table S4 Summary of findings for the effect of DM on TB treatment outcomes among TB patients and GRADE assessment across studies**

223 **for each outcome**

№ of studies	Study design	Risk of bias	Certainty assessment				№ of patients		Effect		Certainty	Importance
			Inconsistency	Indirectness	Imprecision	Other considerations	TB-DM	TB	Relative (95% CI)	Absolute (95% CI)		
Death (Majority of studies followed up for 1 year. Assessed with study defined measures; all cause or TB-specific)												
64	observational studies ^a	not serious	serious ^b	not serious	not serious	none	7356/56122 (13.1%)	29117/243035 (12.0%)	OR 1.88 (1.59 to 2.19)	84 more per 1,000 (from 58 more to 110 more)	⊕⊕⊕○ MODERATE	CRITICAL
Death and Failure (Majority of studies followed up for 1 year. Assessed with study defined measures; for failure majority follow WHO definition)												
35	observational studies ^c	not serious	serious ^b	not serious	not serious	none	4854/40029 (12.1%)	22716/166815 (13.6%)	OR 1.65 (1.39 to 1.96)	70 more per 1,000 (from 44 more to 100 more)	⊕⊕⊕○ MODERATE	CRITICAL

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	TB-DM	TB	Relative (95% CI)	Absolute (95% CI)		
Relapse and recurrence (Majority of studies follow up for 1 year. Assessed with study defined measures; majority follow WHO definition)												
19	observational studies ^d	not serious	not serious	not serious	not serious	none	755/17905 (4.2%)	2787/74686 (3.7%)	OR 1.64 (1.29 to 2.08)	22 more per 1,000 (from 10 more to 37 more)	⊕⊕○○ LOW	CRITICAL
MDR-TB (Majority of studies follow up during treatment. Assessed with study defined measures) ^e												
19	observational studies ^f	serious ^e	not serious	serious ^e	not serious	none	270/4216 (6.4%)	712/41108 (1.7%)	OR 1.98 (1.51 to 2.60)	16 more per 1,000 (from 9 more to 26 more)	⊕⊕○○ LOW	CRITICAL
Sputum culture conversion at 2-3 months (Outcome informs follow up from baseline to 3 months. Assessed with objective lab measure, however, any culture method included) ^{ghi}												

№ of studies	Study design	Risk of bias	Certainty assessment				№ of patients		Effect		Certainty	Importance
			Inconsistency	Indirectness	Imprecision	Other considerations	TB-DM	TB	Relative (95% CI)	Absolute (95% CI)		
18	observational studies ^c	not serious	not serious	not serious	not serious	none	685/3054 (22.4%)	1675/15099 (11.1%)	OR 2.07 (1.63 to 2.62)	0 fewer per 1,000 (from 106 fewer to 136 more)	⊕⊕○○ LOW	IMPORTANT

224 CI: Confidence interval; OR: Odds ratio

225 Explanations

- 226 a. Any observational study reporting this outcome of interest was included. However, only four studies identified were not cohort studies and were all case-control studies.
- 227 b. Heterogeneity denoted by the I² statistic is high and only partially explained.
- 228 c. Any observational study reporting this outcome of interest was allowed for. However, only two non-cohort studies were identified and all were case-control studies.
- 229 d. Any observational study reporting this outcome of interest was allowed for. However, only five non-cohort studies were identified and all were case-control studies.
- 230 e. May not indicate new cases of MDR-TB
- 231 f. Any observational study reporting this outcome of interest was allowed for. For this outcome, only cohort studies were identified.
- 232 g. Not an outcome, on the pathway to a poor outcome
- 233 h. Culture is the gold standard for laboratory confirmation of active TB disease, although diagnosis can be made using clinical judgement alone. Differing culture techniques are available. Broth culture (BACTEC, MGIT, VersaTREK, MBBACT) allows detection in 4-14 days, solid media in 3-6 weeks. Here, papers report culture conversion at 2-3 months detected by serial bacteriologic exam using any culturing system.
- 235 i. Majority of cohort studies continue follow up for 1 year, however, data for this outcome was collected for each study participant at a specific time-point. Thus, limited deviation in time during which events can occur is seen between studies.
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