

**Supplementary Table S1 Detailed information of the active tuberculosis cases identified during 5 year follow-up**

<b>ID</b>	<b>Age</b>	<b>Sex</b>	<b>Group</b>	<b>Time for diagnosis</b>	<b>Smear</b>	<b>Culture</b>	<b>Gene X-pert</b>	<b>Diagnosis</b>
1201020181	59	male	Untreated control group	Nov-17	negative	negative	negative	Clinical diagnosis
3241010621	70	male	Untreated control group	Nov-17	negative	negative	negative	Clinical diagnosis
3151030171	66	female	Untreated control group	Jun-17	negative	negative	negative	Clinical diagnosis
1032040081	58	male	Untreated control group	Nov-17	negative	negative	negative	Clinical diagnosis
1131020122	60	female	Untreated control group	Nov-17	negative	negative	negative	Clinical diagnosis
1201030011	70	male	Untreated control group	Nov-17	negative	negative	negative	Clinical diagnosis
1231040132	51	female	Untreated control group	Nov-17	negative	negative	negative	Clinical diagnosis
3071080142	55	female	Untreated control group	Nov-17	negative	negative	negative	Clinical diagnosis
3211040312	58	male	Untreated control group	Nov-17	negative	negative	negative	Clinical diagnosis
3431020172	64	male	Untreated control group	Nov-17	negative	negative	negative	Clinical diagnosis
3431050401	59	female	Untreated control group	Dec-16	negative	negative	negative	Clinical diagnosis
4021050461	69	male	Untreated control group	Dec-16	negative	negative	negative	Clinical diagnosis
4061030252	63	male	Untreated control group	Nov-16	positive	positive	positive	Microbiological confirmed
6044050031	53	male	Untreated control group	Nov-17	negative	negative	negative	Clinical diagnosis
1181040172	64	male	Untreated control group	Dec-19	negative	negative	negative	Clinical diagnosis
3063040171	66	male	Untreated control group	Dec-19	negative	negative	negative	Clinical diagnosis
7031040361	65	male	Untreated control group	Dec-19	negative	negative	negative	Clinical diagnosis
5081040202	64	female	Untreated control group	Apr-19	negative	negative	negative	Clinical diagnosis
2173070321	64	male	Untreated control group	Aug-20	negative	negative	negative	Clinical diagnosis
3251060271	67	male	Untreated control group	Aug-20	negative	negative	negative	Clinical diagnosis
1042040381	66	male	Untreated control group	Aug-20	negative	positive	positive	Microbiological confirmed
3152060882	64	male	Untreated control group	Aug-20	negative	positive	negative	Microbiological confirmed
4141040201	66	male	Untreated control group	Aug-20	negative	positive	positive	Microbiological confirmed
5041030051	70	female	Untreated control group	Aug-20	negative	positive	positive	Microbiological confirmed
6066020021	61	male	Untreated control group	Aug-20	positive	positive	positive	Microbiological confirmed
4061030091	69	male	Untreated control group	Dec-20	negative	negative	negative	Clinical diagnosis
1241020241	68	female	Treated group	Nov-17	negative	negative	negative	Clinical diagnosis
3071070301	67	male	Treated group	May-16	negative	negative	negative	Clinical diagnosis
3231020332	62	male	Treated group	Oct-17	negative	negative	negative	Clinical diagnosis
4141090242	69	female	Treated group	Nov-17	negative	negative	negative	Clinical diagnosis
6022040081	65	female	Treated group	Aug-16	negative	negative	negative	Clinical diagnosis
3301070171	68	male	Treated group	Nov-16	negative	negative	negative	Clinical diagnosis
5081010531	62	male	Treated group	Sep-20	positive	positive	positive	Microbiological confirmed
1061030361	68	male	Treated group	Dec-20	negative	negative	negative	Microbiological confirmed
3251020041	69	female	Treated group	Dec-20	negative	negative	negative	Clinical diagnosis
3301060042	66	female	Treated group	Dec-20	negative	negative	negative	Clinical diagnosis
3431010121	70	male	Treated group	Dec-20	negative	negative	negative	Clinical diagnosis
4131080101	61	male	Treated group	Oct-19	negative	negative	negative	Clinical diagnosis

Abbreviations: TB, tuberculosis.

**Supplementary Table S2 Characteristics of the study participants with the highest quartile baseline IFN- $\gamma$  levels included in the intention-to-treat analysis**

Variables	Treated group <sup>#</sup> n (%)	Untreated control group n (%)	p for $\chi^2$ test
<b>Total</b>	337	288	
<b>Age (years), n (%)</b>			
50-55	93 (27.60)	62 (21.53)	0.371
56-60	86 (25.52)	79 (27.43)	
61-65	84 (24.93)	76 (26.39)	
66-70	74 (21.96)	71 (24.65)	
<b>Gender, n (%)</b>			
Female	138 (40.95)	120 (41.67)	0.856
Male	199 (59.05)	168 (58.33)	
<b>BMI (Kg/m<sup>2</sup>), n (%)</b>			
<18.5	139 (41.25)	120 (41.67)	0.941
18.5–<24	5 (1.48)	6 (2.08)	
24–<28	129 (38.28)	110 (38.19)	
≥28	64 (18.99)	52 (18.06)	
<b>Smoking, n (%)</b>			
Never smoked	186 (55.19)	158 (54.86)	0.934
Ever smoked	151 (44.81)	130 (45.14)	
<b>Presence of TB history, n (%)</b>			
No	333 (98.81)	277 (96.18)	<b>0.032</b>
Yes	4 (1.19)	11 (3.82)	
<b>Alcohol drinking, n (%)</b>			
No	231 (68.55)	194 (67.36)	0.752
Yes	106 (31.45)	94 (32.64)	
<b>Fasting blood glucose, n (%)</b>			
≤7 mmol·L <sup>-1</sup>	314 (93.18)	264 (91.67)	0.476
>7 mmol·L <sup>-1</sup>	23 (6.82)	24 (8.33)	
<b>History of silicosis, n (%)</b>			
No	331 (98.22)	280 (97.22)	0.401
Yes	6 (1.78)	8 (2.78)	

Abbreviations: BMI, body mass index; TB, tuberculosis.

<sup>#</sup>: Treated group completed 6 weeks of twice-weekly rifapentine plus isoniazid (both with a maximum dose of 600 mg).

**Supplementary Table S3 Characteristics of active tuberculosis and non-tuberculosis participants with the highest quartile baseline IFN- $\gamma$  levels**

Variables	Active TB	Non-TB	p for $\chi^2$ test
<b>Age (years), n (%)</b>			
50-55	0 (0.00)	155 (25.24)	0.078
56-60	2 (18.18)	163 (26.55)	
61-65	6 (54.55)	154 (25.08)	
66-70	3 (27.27)	142 (23.13)	
<b>Gender, n (%)</b>			
Female	2 (18.18)	256 (41.69)	0.116
Male	9 (81.82)	358 (58.31)	
<b>BMI (Kg/m<sup>2</sup>), n (%)</b>			
<18.5	1 (9.09)	10 (1.63)	<b>0.025</b>
18.5–<24	8 (72.73)	251 (40.88)	
24–<28	2 (18.18)	237 (38.60)	
$\geq$ 28	0 (0.00)	116 (18.89)	
<b>Ever-smoker, n (%)</b>			
No	3 (27.27)	341 (55.54)	0.062
Yes	8 (72.73)	273 (44.46)	
<b>Current alcohol drinking, n (%)</b>			
No	6 (54.55)	419 (68.24)	0.335
Yes	5 (45.45)	195 (31.76)	
<b>With a history of silicosis, n (%)</b>			
No	10 (90.91)	601 (97.88)	0.121
Yes	1 (9.09)	14 (2.12)	
<b>CXR identified prior TB, n (%)</b>			
No	9 (81.82)	601 (97.88)	<b>&lt;0.001</b>
Yes	2 (18.18)	13 (2.12)	
<b>Fasting blood glucose, n (%)</b>			
$\leq$ 7 mmol/L	11 (100.00)	567 (92.35)	0.340
>7 mmol/L	0 (0.00)	47 (7.65)	
<b>Groups, n (%)</b>			
Treated group	2 (18.18)	335 (54.56)	<b>0.016</b>
Untreated control group	9 (81.82)	279 (45.44)	

Abbreviations: BMI, Body mass index; CI, confidence interval; CXR, chest radiography; HR, hazard ratio; TB, tuberculosis.

**Supplementary Table S4 Subgroup analysis of incidence of active tuberculosis according to median baseline IFN- $\gamma$  and timing of tuberculosis occurrence**

<b>Treated group<sup>#</sup></b>			
	<b>The first 2-year after intervention</b>	<b>The last 3-year after intervention</b>	<b>p for <math>\chi^2</math> test<sup>+</sup></b>
<b>Baseline IFN-<math>\gamma</math> &lt;1.34 IU/mL</b>	0.08 (2/2471) /100 person-years	0.06 (2/3405) /100 person-years	1.000
<b>Baseline IFN-<math>\gamma</math> <math>\geq</math>1.34 IU/mL</b>	0.16 (4/2471) /100 person-years	0.12 (4/3405) /100 person-years	0.922
<b>p for <math>\chi^2</math> test<sup>§</sup></b>	0.683	0.683	
<b>Untreated control group</b>			
	<b>The first 2-year after intervention</b>	<b>The last 3-year after intervention</b>	<b>p for <math>\chi^2</math> test<sup>+</sup></b>
<b>Baseline IFN-<math>\gamma</math> &lt;1.34 IU/mL</b>	0.19 (4/2057) /100 person-years	0.27 (9/3280) /100 person-years	0.564
<b>Baseline IFN-<math>\gamma</math> <math>\geq</math>1.34 IU/mL</b>	0.19 (4/2057) /100 person-years	0.24 (8/3280) /100 person-years	0.941
<b>p for <math>\chi^2</math> test<sup>§</sup></b>	1.000	0.808	

Abbreviations: TB, tuberculosis;

<sup>#</sup>: Treated group completed 6 weeks of twice-weekly rifapentine plus isoniazid (both with a maximum dose of 600 mg);

<sup>+</sup>: p value of incidence of active TB according to timing of TB occurrence;

<sup>§</sup>: p value of incidence of active TB according to median baseline IFN- $\gamma$ ;

**Supplementary Table S5 Incidence of active tuberculosis after excluding those with prior tuberculosis and diabetes mellitus**

	<b>Treated group<sup>#</sup></b>	<b>Untreated control group</b>
<b>Intention-to-treat analysis</b>		
Subjects, n	1197	1023
Person-years, n	5433	4753
Incident cases, n	11	19
Cumulative incidence, % (95% CI)	0.92 (0.38, 1.45)	1.86 (1.03, 2.68)
Protective rate <sup>+</sup> , %	50.54	
Incidence rate per 100 person-years (95% CI)	0.20 (0.08, 0.32)	0.40 (0.22, 0.58)
Protective rate <sup>§</sup> , %	50.00	
<b>Per-protocol analysis</b>		
Subjects, n	935	1023
Person-years, n	4312	4753
Incident cases, n	8	19
Cumulative incidence, % (95% CI)	0.86 (0.27, 1.45)	1.86 (1.03, 2.68)
Protective rate <sup>+</sup> , %	53.76	
Incidence rate per 100 person-years (95% CI)	0.19 (0.06, 0.31)	0.40 (0.22, 0.58)
Protective rate <sup>§</sup> , %	52.50	

Abbreviations: TB, tuberculosis; CI, confidence interval.

<sup>#</sup>: Treated group completed 6 weeks of twice-weekly rifapentine plus isoniazid (both with a maximum dose of 600 mg);

<sup>+</sup>: calculating protective rate by using cumulative incidence;

<sup>§</sup>: calculating protective rate by using incidence rate per 100 person-years.