Public Health Action

International Union Against Tuberculosis and Lung Disease
Health solutions for the poor

VOL 8 NO 3 PUBLISHED 21 SEPTEMBER 2018

A population-based tuberculosis contact investigation in the country of Georgia

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http://dx.doi.org/10.5588/pha.18.0024

Setting: Identification and screening of contacts of patients with active tuberculosis (TB) is infrequent in low- and middle-income countries.

Objective: To estimate the incidence, prevalence and risk factors of latent tuberculous infection (LTBI) and active TB among contacts of newly reported smear-positive TB patients.

Design: A population-based contact investigation of sputum smear-positive pulmonary TB (PTB) cases diagnosed between April and December 2012 in Georgia was conducted. LTBI was assessed using the tuberculin skin test (TST). Contacts with active TB were identified from the National TB Program surveillance database.

Results: Among 896 index patients with active TB, 3133 contacts were identified and 1157 (37%) underwent a TST, 34% of whom were positive. Most contacts were household contacts (86%) and female (58%). Among contacts, the 1-year period prevalence of active TB was 3.3% (95%CI 2.70–3.98); the incidence rate was 1101 per 100 000 person-years (95%CI 822–1443). In multivariable analysis, household contacts were more likely to have LTBI (adjusted OR [aOR] 2.28, 95%CI 1.49–3.49) than close contacts.

Conclusions: A high prevalence of both LTBI and active TB was identified among contacts of PTB cases. Efforts aimed at active case finding among TB contacts should improve early case detection and enhance TB control efforts.

Tuberculosis (TB) is a major public health problem and the leading cause of mortality due to an infectious disease worldwide. In 2016, an estimated 10.4 million people had active TB, and 1.7 million people with TB died.[1] The early diagnosis of pulmonary TB (PTB) is critically important to prevent TB transmission. As each untreated sputum smear-positive patient with TB is estimated to infect 10–15 contacts annually,[2] early identification, diagnosis, and treatment of contacts of TB patients can be an effective method to reduce transmission of *Mycobacterium tuberculosis*.[3]

Contacts of patients with active PTB are at increased risk of tuberculous infection and disease.[4,5] TB contact tracing has traditionally been carried out in high-income, low TB burden countries.[6–9] However, recent studies suggest that TB contact investigations may also be effective for identifying cases and preventing further disease transmission in low- and middle-income countries (LMICs) with a high TB burden.[10–16] According to a 2013 meta-analysis, the prevalence of active TB (3%) and latent tuberculous infection (LTBI) (52%) among contacts was higher in LMICs than in high-income settings (1% and 28%, respectively).[4] Some of the risk factors for LTBI among contacts suggested in the literature are male sex, household contact, older age, employment, and time spent with the index case.[17–20]

After the fall of the Soviet Union in 1991, TB incidence in the country of Georgia increased substantially, and the emergence of drug-resistant TB and delays in diagnosis challenged TB control in the country.[21–24] Although TB incidence has decreased in recent years (from 116 cases per 100 000 population in 2012 to 92/100 000 in 2016),[1,25] there remains a lack of data on contact transmission. Before 2012, the national TB control policy in Georgia did not include performing routine contact investigations. In 2012, the National Center for Disease Control and Public Health of Georgia (NCDC) initiated a nationwide TB contact investigation program.

Using data from this program and from national TB surveillance databases, we aimed to estimate the incidence, prevalence and risk factors for LTBI and active TB among contacts of TB cases.

METHODS

Study design and population

Contacts of active PTB cases diagnosed with acid-fast bacilli (AFB) sputum smear-positive disease between 1 April and 31 December 2012 and registered by the Georgian National TB Program (NTP) were included in the study. After attending a training course at the NCDC on contact investigation and tuberculin skin test (TST) methodology, municipality public health center epidemiologists interviewed each index case within 4 days of the TB diagnosis to determine possible contacts, and used a standardized data form to interview each contact who could be located, including both household and close contacts. All contact investigation interviews took place at the contact's home, work place or at a public health center. TST was offered to all of the contacts and was carried out using the Mantoux method;[26] 0.1 ml tuberculin was used for the TST. Contacts who self-reported a previous diagnosis of active TB were not further evaluated.

The study team created a database at the NCDC and recorded the following information from the national contact investigation program: type of contact (household vs. close contact), TST induration size in the contacts, and basic demographic data for both

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KEY WORDS
tuberculin; LTBI; active TB

Received 16 April 2018
Accepted 4 July 2018

PHA 2018; 8(3): 110–117

contacts and index cases. Additional data on TB index cases were obtained from the NTP surveillance database, which includes all TB cases diagnosed and registered in Georgia's NTP. For each index patient, we abstracted additional demographic data, including employment status, history of incarceration, past history of TB, as well as drug susceptibility testing (DST) results.

To evaluate active TB among contacts, a retrospective cohort study was performed. All contacts were cross-linked with the surveillance database in 2013–2014 after at least a 1-year period from the date of the contact investigation. Linking variables included name, age and region of residence. To improve accuracy, the cross-linking was conducted separately by two members of the study team, and the results were integrated.

Definition of the variables

Contacts were defined according to the World Health Organization (WHO) recommendations for investigating contacts of persons with infectious TB in LMICs.[13] A household contact was defined as a contact living in the same household as the index TB case, and a close contact was defined as a contact of an active TB case who did not live in the same household as the index case (e.g., friend, work colleague, neighbor, classmate). An induration size ⩾10 mm was considered as a posi-

ACKNOWLEDGEMENTS

This work was supported in part by the National Institutes of Health (NIH) Fogarty International Center (D43TW007124), NIH National Institute of Allergy and Infectious Diseases (K23AI103044, R21AI122001 and R03AI133172), the National Center for Advancing Translational Sciences (UL1TR000454 and UL1TR002378), Bethesda, MD, USA; and the Emory University Global Health Institute, Atlanta, GA, USA. The authors are grateful to the National Center for Tuberculosis and Lung Disease data management team and Department of Communicable Diseases at NCDC, Tbilisi, Georgia, for providing all the necessary data and invaluable advice. Conflicts of interest: none declared.

TABLE 1 Factors associated with not undergoing a TST

Characteristics	TST done (n = 1157)* n (%)	TST not done (n = 1976)* n (%)	OR (95%CI)†	P value
Type of contact				<0.01
Close	210 (51.1)	201 (48.9)	1	
Household	834 (32.9)	1698 (67.1)	2.13 (1.72–2.63)	
Contacts				
Sex				
Male	497 (37.3)	835 (62.7)	1	0.73
Female	660 (36.7)	1141 (63.3)	1.03 (0.89–1.19)	
Age category, years				<0.01
0–4	120 (44.4)	150 (55.6)	1	
5–14	250 (53.3)	219 (46.7)	0.7 (0.52–0.95)	
15–44	468 (34.5)	890 (46.5)	1.52 (1.17–1.98)	
45–64	200 (29.5)	479 (70.5)	1.92 (1.43–2.56)	
⩾65	82 (31.8)	176 (68.2)	1.72 (1.20–2.45)	
Index case				
Employment status				<0.01
Employed	116 (28.9)	285 (71.1)	1	
Unemployed	963 (37.7)	1594 (62.3)	0.67 (0.54–0.85)	
History of incarceration				0.47
No	999 (36.5)	1741 (63.5)	1	
Yes	67 (39.2)	104 (60.8)	0.89 (0.65–1.22)	
History of TB				0.99
No	903 (36.9)	1544 (63.1)	1	
Yes	215 (36.9)	368 (63.1)	1 (0.83–1.21)	
IDP				0.04
No	1044 (37.1)	1768 (62.9)	1	
Yes	18 (25.0)	54 (75.0)	1.77 (1.03–3.03)	
MDR-TB				0.21
No	659 (34.6)	1247 (65.4)	1	
Yes	126 (38.2)	204 (61.8)	0.89 (0.67–1.09)	
Sex				0.25
Male	856 (37.8)	1406 (62.2)	1	
Female	255 (35.5)	464 (64.5)	1.05 (0.93–1.32)	
Age category, years				<0.01
0–4	18 (45.0)	22 (55.0)	1	
5–14	57 (69.5)	25 (30.5)	0.36 (0.16–0.78)	
15–44	705 (38.2)	1138 (61.8)	1.32 (0.70–2.48)	
45–64	283 (32.1)	599 (67.9)	1.74 (0.91–3.28)	
⩾65	94 (32.9)	192 (67.1)	1.65 (0.86–3.27)	

*The separate cells might not add up to the total due to missing values.
†Comparison of TST not done vs. TST done.
TST = tuberculin skin test; OR = odds ratio; CI = confidence interval; TB = tuberculosis; IDP = internally displaced person; MDR-TB = multidrug-resistant TB.

TABLE 2 Bivariate analysis of demographic characteristics and TST result

Characteristics	TST-positive (*n* = 393)* *n* (%)	TST-negative (*n* = 764)* *n* (%)	OR (95%CI)	*P* value
Type of contact				0.02
Close	57 (27.1)	153 (72.9)	1	
Household	294 (35.4)	540 (64.8)	1.46 (1.05–2.04)	
Contacts				
Sex				0.95
Male	169 (34.0)	328 (66.0)	1	
Female	224 (33.9)	436 (66.1)	0.99 (0.78–1.27)	
Age category, years				0.33
0–4	48 (40.0)	72 (60.0)	1.61 (0.89–2.94)	
5–14	83 (33.2)	167 (66.8)	1.32 (0.79–2.20)	
15–44	165 (35.3)	303 (64.7)	1.04 (0.59–1.82)	
45–64	60 (30.0)	140 (70.0)	1.2 (0.70–2.07)	
⩾65	24 (29.3)	58 (70.7)	1	
Index TB case				
Employment status				0.045
Unemployed	317 (32.9)	646 (67.1)	1	
Employed	49 (42.2)	67 (58.8)	1.49 (1.01–2.20)	
History of TB				0.78
No	306 (33.9)	597 (66.1)	1	
Yes	75 (34.9)	140 (65.1)	1.05 (0.77–1.43)	
History of incarceration				0.3
No	344 (34.4)	655 (65.6)	1	
Yes	19 (28.4)	48 (71.6)	0.75 (0.44–1.30)	
IDP				0.64
No	350 (33.5)	694 (66.5)	1	
Yes	7 (38.9)	11 (61.1)	1.26 (0.49–3.28)	
MDR-TB				0.9
No	274 (34.0)	533 (66.1)	1	
Yes	40 (31.8)	86 (68.3)	0.97 (0.65–1.47)	
Sex				<0.01
Female	75 (27.2)	201 (72.8)	1	
Male	318 (36.1)	563 (63.9)	1.51 (1.12–2.04)	
Age category, years				0.08
0–4	6 (33.3)	12 (66.7)	1	
5–14	19 (33.3)	38 (66.7)	1 (0.32–3.08)	
15–44	252 (35.7)	453 (64.3)	1.11 (0.41–3.00)	
45–64	96 (33.9)	187 (66.1)	1.03 (0.37–2.82)	
⩾65	20 (21.3)	74 (78.7)	0.54 (0.18–1.62)	

*The separate cells might not add up to the total due to missing values.
TST = tuberculin skin test; OR = odds ratio; CI = confidence interval; TB = tuberculosis; IDP = internally displaced person; MDR-TB = multidrug-resistant TB.

tive test result. LTBI was defined as a positive TST without previous diagnosis of active TB. Contacts with active TB (both pulmonary and extra-pulmonary, regardless of smear status) were defined as prevalent TB cases if they were diagnosed between 120 days before and up to 60 days after the date of diagnosis of active TB of their index patient. Contacts were defined as incident TB cases if they were diagnosed with active TB ⩾60 days after the date of TB diagnosis of their corresponding index patient.

Data analysis

The two primary study outcomes of interest were LTBI and incident or prevalent active TB among contacts. We used bivariate analyses and the χ^2 test to examine factors associated with LTBI and active TB. Multivariable logistic regression was used to calculate adjusted odds ratios (aORs) and 95% confidence intervals (95%CIs) for contact and index patient characteristics associated with LTBI and active TB among contacts. The primary exposure of interest was type of contact (household vs. close). The model building strategy was based on purposeful selection of covariates.[27,28] A two-side *P* value of <0.05 was considered statistically significant for all analyses. Statistical multiplicative interaction between type of contact and contact's sex and age, and index patient's sex was assessed using the Wald χ^2 for parameters of product terms. Statistical analyses were performed using SAS v 9.3 (Statistical Analysis System, Cary, NC, USA) and OpenEpi v 3.03 (open source).

Ethics

The study was approved by the Review Boards of Emory University, Atlanta, GA, USA, and the NCDC, Tbilisi, Georgia.

RESULTS

Description of study population

A total of 896 index AFB sputum smear-positive TB cases had at least one contact investigated. Among the index TB cases, 675 (75%) were male; the mean age was 41 years (standard deviation [SD] 16.7). More than one fifth (n = 187, 22%) of the index patients had a previous history of TB (i.e., retreatment cases) and 762 (90%) were unemployed. DST results were available for 742 (83%) index patients, of whom 87 (11.7%) had multidrug-resistant TB (MDR-TB).

A total of 3133 contacts were investigated, 1332 (43%) of whom were male; the mean age of the contacts was 32 years (SD 21.4). The type of contact was recorded for 2943 (94%) contacts: 2532 (86%) were household and 411 (14%) were close contacts.

Latent tuberculous infection

Among the 3133 contacts, 1157 (37%) underwent TST. In bivariate analyses, factors associated with not receiving TST included household contact (OR 2.13, 95%CI 1.72–2.63), age (older people were less likely to undergo TST; comparing oldest vs. youngest age groups, OR 1.72, 95%CI 1.20–2.45), and being an internally displaced person (OR 1.77, 95%CI 1.03–3.03) (Table 1).

Among contacts who underwent TST, LTBI prevalence was 34% (393/1157 contacts). Prevalence varied by region, and ranged from 19% to 48%. LTBI prevalence was significantly higher among household contacts than close contacts (35% vs. 27%, P = 0.03). This prevalence was not different between male and female contacts (34% in both, P = 0.95). However, contacts of male index TB cases had a higher prevalence of LTBI than contacts of female index patients (36% vs. 27%, P = 0.01) (Table 2).

In multivariable analysis, risk factors for LTBI included being a household contact (aOR 2.28, 95%CI 1.49–3.49), being a contact of an index case who was employed (aOR 1.66, 95%CI 1.10–2.52), and being a contact of a male index case (aOR 1.58, 95%CI 1.14–2.19) (Table 3). No statistical interaction was detected between sex and type of contact.

Active tuberculosis

In total, 116/3133 (3.7%) contacts had active TB. Five persons listed as contacts were diagnosed with active TB >120 days before their index case and were excluded from further analyses. Among the remaining 111 cases, 59 (1.9%) were prevalent cases and 52 (1.7%) were incident cases. The estimated incidence rate was 1101 cases/100 000 person-years (95%CI 822–1443). The analysis of risk factors for TB within 1 year of the diagnosis of the index case included 103 contacts (111 cases minus 8 cases diagnosed >12 months after the contact investigation) (Figure).

TABLE 3 Multivariable analysis of risk factors for a positive TST among contacts of index TB cases

Characteristics	aOR (95%CI)	P value
Household contact (vs. close contact)	2.28 (1.49–3.49)	<0.01
Male contact	1.02 (0.75–1.33)	0.99
Age of contact (per 1 year increase)	1 (0.99–1.00)	0.21
Index case		
Employed	1.66 (1.10–2.52)	0.02
Age	0.99 (0.98–1.00)	0.15
Male	1.58 (1.14–2.19)	<0.01

TST = tuberculin skin test; TB = tuberculosis; aOR = adjusted odds ratio; CI = confidence interval.

The estimated 1-year period prevalence of active TB was 3.3% (95%CI 2.70–3.98), and was not significantly different between household and close contacts (prevalence ratio 1.23, 95%CI 0.49–3.12). Among regions of Georgia, the highest period prevalence of active TB was detected in the western regions. Period prevalence was also higher among TST-positive contacts or those who did not undergo TST than those who were TST-negative (Table 4).

In multivariable analysis, the association between contact type and active TB varied by contact's sex (interaction product term P = 0.04). Among males, the odds of active TB were significantly higher for household contacts (aOR 4.38, 95%CI 1.05–18.22); however, among females there was no significant difference between household and close contacts (aOR 0.76, 95%CI 0.35–1.67). Younger age was also associated with an increased 1-year risk of active TB; for example, each year increase in contact age was associated with a significant reduction in the odds of having active TB (aOR 0.98, 95%CI 0.97–0.99). Contacts of male and female index patients did not have a significantly different risk of active TB (aOR 0.82, 95%CI 0.52–1.29) (Table 5). Other variables in the model were also tested for interaction; however, none were significant.

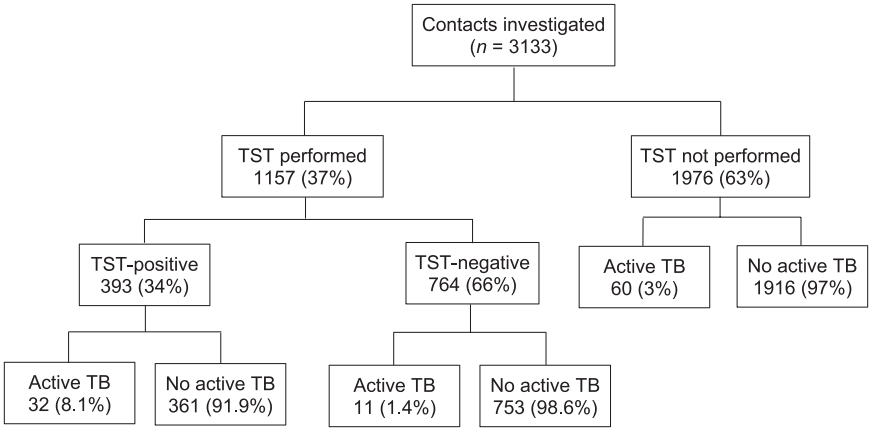

FIGURE Diagram describing TST results and active TB status of all contacts after 1 year from contact investigation. TST = tuberculin skin test; TB = tuberculosis.

TABLE 4 Bivariate analysis of risk factors for having active TB after 1-year follow-up among contacts of smear-positive index patients

Characteristic	Active TB (n = 103)* n (%)	No active TB (n = 3017)* n (%)	OR (95%CI)	P value
Type of contact				
Males				0.03
Close	2 (1.1)	185 (98.9)	1	
Household	53 (4.9)	1019 (95.1)	4.8 (1.16–19.91)	
Females				0.3
Close	8 (3.6)	216 (96.4)	1	
Household	35 (2.4)	1425 (97.6)	0.66 (0.30–1.45)	
Contact				<0.01
Sex				
Male	59 (4.4)	1273 (95.6)	1.85 (1.24–2.75)	
Female	44 (2.4)	1757 (97.6)	1	
Age category, years				<0.01
0–4	18 (6.7)	252 (93.3)	3.61 (1.32–9.88)	
5–14	27 (5.8)	442 (94.2)	3.09 (1.18–8.13)	
15–44	38 (2.8)	1320 (97.2)	1.46 (0.57–3.74)	
45–64	13 (1.9)	666 (98.1)	0.99 (0.35–2.80)	
⩾65	5 (1.9)	253 (98.1)	1	
TST result				<0.01
Negative	12 (1.6)	752 (98.4)	1	
Positive	33 (8.4)	360 (91.6)	5.75 (2.93–11.26)	
TST not done	58 (2.9)	1918 (97.1)	1.9 (1.01–3.55)	
Index TB case				
Employment status				0.9
Employed	14 (3.5)	387 (96.5)	1	
Unemployed	86 (3.4)	2471 (96.6)	0.97 (0.55–1.73)	
History of incarceration				0.4
No	92 (3.4)	2648 (96.6)	1	
Yes	8 (4.7)	163 (95.3)	1.41 (0.67–2.96)	
History of TB				0.87
No	83 (3.4)	2364 (96.6)	1	
Yes	19 (3.3)	564 (96.7)	0.96 (0.58–1.59)	
Outcome of previous TB episode				0.95
Favorable outcome	7 (2.6)	260 (97.4)	1	
Unfavorable outcome	4 (2.5)	154 (97.5)	0.96 (0.28–3.35)	
IDP				0.8
No	93 (3.3)	2719 (96.7)	1	
Yes	2 (2.8)	70 (97.2)	0.84 (0.20–3.46)	
MDR-TB				0.86
No	73 (3.2)	2200 (96.8)	1	
Yes	10 (3.0)	320 (97.0)	0.94 (0.48–1.84)	
Sex				0.5
Male	75 (3.2)	2193 (96.8)	1	
Female	28 (3.7)	737 (96.3)	1.16 (0.75–1.80)	
Age category, years				<0.01
0–4	0	40 (100.0)	—	
5–14	0	82 (100.0)	—	
15–44	79 (4.3)	1764 (95.7)	6.56 (1.60–26.85)	
45–64	21 (2.4)	861 (97.6)	3.1 (0.71–13.38)	
⩾65	3 (1.1)	283 (98.9)	1	

*The separate cells might not add up to the total n due to missing values.
TB = tuberculosis; OR = odds ratio; CI = confidence interval; TST = tuberculin skin test; IDP = internally displaced person; MDR-TB = multidrug-resistant TB.

DISCUSSION

The analysis of this first nationwide contact investigation in Georgia demonstrated a high prevalence of LTBI (34%) among contacts of newly reported smear-positive TB patients. Household contacts (aOR 2.28), being a contact of an employed index case (aOR 1.66) and being a contact of a male index case (aOR 1.58) were significantly associated with LTBI. Further analysis using the national surveillance database indicated that the 1-year period prevalence of active TB among contacts was 3.3%. These findings

TABLE 5 Multivariable analysis of risk factors for having active TB after 1-year follow-up among contacts of active TB cases in Georgia

Characteristics	aOR (95%CI)	*P* value
Household (vs. close) contact, among males	4.38 (1.05–18.22)	0.04
Household (vs. close) contact, among females	0.76 (0.35–1.67)	0.49
Age (per 1 year increase)	0.98 (0.97–0.99)	<0.01
Contact of male index case	0.82 (0.52–1.29)	0.4

TB = tuberculosis; aOR = adjusted odds ratio; CI = confidence interval.

show a high prevalence of LTBI and active TB among both household and close contacts, and highlight the potential role of contact investigation programs as an effective tool for early identification of TB cases.

Our analysis is based on nationwide data, rendering these findings generalizable to the country and also to other LMICs with TB epidemiology similar to that of Georgia. Furthermore, to our knowledge, this was the first contact investigation in Georgia that included close contacts as a separate group. Our analysis shows that although LTBI prevalence in this group of contacts is significantly lower than in household contacts (27.1% vs. 35.4%), it is still high enough to recommend the routine investigation of close contacts.

To date, there have been few publications on TB contact investigations in Georgia. Previous studies of LTBI in contacts of TB cases were limited to specific subgroups of the population, such as internally displaced persons and health care workers.[29,30] A study conducted in 2010–2011 in the capital city, Tbilisi, reported that 52.7% (n = 869) of contacts referred by index patients had LTBI, which is higher than the prevalence observed in our population-based study (34%). Studies from other LMICs also report higher LTBI prevalence among contacts. Two meta-analyses conducted in 2008 and 2013 reported an LTBI prevalence of respectively 51.4% and 51.5% among household contacts and among all close contacts.[4,11] One possible explanation for this difference is the conservative approach in the TST methodology that was used in the nationwide TB contact investigation program: to achieve higher specificity of the test, an induration size of ⩾10 mm was considered a positive result, while in some of the previous studies, including the one conducted in Tbilisi, a 5 mm threshold was used. Incidence rates reported by our study and the previous study in Tbilisi are consistent with each other (1101 vs. 1126 cases/100 000 person-years).[31]

Our analysis of LTBI risk factors indicates that household contacts had significantly higher odds of having LTBI (aOR 2.28). This finding might indicate that in resource-limited settings where it is not feasible to investigate all close contacts, contact investigation efforts should focus on household contacts. An analysis of risk factors for active TB suggests that younger individuals are at higher risk of active TB. In addition, a positive TST result was associated with active TB: the period prevalence of active TB was 8.4% among TST-positive contacts compared to 1.6% among TST-negative contacts ($P < 0.01$). This indicates that the TST might be a valuable tool in predicting progression to active TB. Using the TST to predict active TB among contacts should therefore be considered when planning future contact investigation studies. In accordance with the new WHO guidelines,[32] which encourage treatment of LTBI, our findings also suggest that LTBI treatment could potentially avert some proportion of active TB among contacts, particularly among younger individuals. However, additional studies specifically focusing on LTBI treatment should be conducted before recommending routine LTBI treatment in Georgia. Currently, LTBI treatment is routinely given only to children aged <5 years.

Our study had several limitations. First, we were unable to observe TST conversion, to conduct molecular genetic analyses or to perform comparisons of DST profiles to compare TB strains in cases and contacts. We therefore assumed that contacts were infected with TB by their index patients; however, it should be noted that genotype matching between cases and contacts ranges from 63% to 85% in different studies.[33–35] Second, a large proportion of contacts in our study did not undergo TST, resulting in data on LTBI status being available for only a limited portion of the total population. Nonetheless, contacts who received TST were from diverse regions of Georgia, and we believe the generalizability of our findings is not substantially limited by those with missing LTBI status. Third, TST induration size was not measured consistently by epidemiologists, which precluded the use of various induration sizes to define LTBI. Fourth, the detection of active TB among contacts was a passive process. Contacts were not followed actively; instead, a national surveillance database was used to identify contacts diagnosed with active TB. Our findings on active TB among contacts may therefore have been underestimated. According to the WHO, the estimated case detection rate in Georgia in 2012 was 78%.[25] Finally, human immunodeficiency virus (HIV) testing was not conducted among contacts. However, HIV prevalence in Georgia is low in the general population and among TB patients, and it is unlikely that HIV had a substantial effect on the progression of TB in our study.[36,37]

In conclusion, our results suggest that contacts of active smear-positive PTB patients are at higher risk of both LTBI and active TB. To better understand the risk factors for these two conditions and improve case detection, future contact investigation programs in Georgia should include screening for both LTBI and active TB; additional studies using molecular genetic analyses will help better understand TB transmission patterns in Georgia. With well-planned, consistent programmatic and scientific activities, contact investigation can become a powerful tool in reducing TB incidence in Georgia and contribute to a better understanding of disease transmission and progression patterns.

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Contexte : Identifier et dépister les contacts des patients atteints de tuberculose (TB) active n'est pas souvent réalisé dans les pays à revenu faible et moyen.
Objectif : Estimer l'incidence, la prévalence et les facteurs de risque d'infection tuberculeuse latente (LTBI) et de TB active parmi les contacts de patients TB nouveaux à frottis positif.
Schéma : Une investigation en population a été réalisée à la recherche des contacts de cas de TB pulmonaire à frottis positif diagnostiqués entre avril et décembre 2012 en Géorgie ; la LTBI a été évaluée grâce à un test cutané à la tuberculine (TST). Les contacts atteints de TB active ont été identifiés à partir de la base de données de surveillance du Programme National TB.
Résultats : Parmi 896 patients index atteints de TB active, 3133 contacts ont été identifiés et 1157 (37%) ont eu un TST, dont 34% ont été positifs. La majorité des contacts ont été des contacts domiciliaires (86%) et des femmes (58%). Parmi les contacts, la prévalence sur un an de la TB active a été de 3,3% (IC95% 2,70–3,98) tandis que le taux d'incidence a été de 1101 par 100 000 années-personne (IC95% 822–1443). En analyse multivariée, les contacts domiciliaires ont été plus susceptibles d'avoir une LTBI (OR ajusté [ORa] 2,28 ; IC95% 1,49–3,49) comparés aux contacts étroits.
Conclusion : Une prévalence élevée à la fois de LTBI et de TB active a été identifiée parmi les contacts des cas de TB pulmonaire. Les efforts visant à une recherche active de cas parmi les contacts de TB devraient améliorer une détection précoce des cas et renforcer les efforts de lutte contre la TB.

Marco de referencia: La localización y la investigación de contactos de pacientes con tuberculosis (TB) activa rara vez se siguen en los países con ingresos bajos y medianos.
Objetivo: Estimar la incidencia, la prevalencia y los factores de riesgo de contraer la infección tuberculosa latente (LTBI) y la TB activa en los contactos de los casos nuevos de TB con baciloscopia positiva notificados.
Método: Se llevó a cabo una investigación de base poblacional de los contactos de casos de TB pulmonar con baciloscopia positiva diagnosticados de abril a diciembre del 2012 en Georgia; se investigó la LTBI mediante la prueba cutánea de la tuberculina (TST). Los contactos con TB activa se localizaron en la base de datos de vigilancia del Programa Nacional contra la Tuberculosis.
Resultados: Se reconocieron 3133 contactos de los 896 casos iniciales con TB activa y se practicó la TST en 1157 (37%), de los cuales el 34% obtuvo un resultado positivo. La mayoría de los contactos fueron contactos domiciliarios (86%) y de sexo femenino (58%). En los contactos, la prevalencia a un año de TB activa fue 3,3% (IC95% 2,70–3,98) y la tasa de incidencia fue 1101 por 100 000 años-persona (IC95% 822–1443). El análisis multivariante reveló que la probabilidad de padecer la ITL era mayor en los contactos domiciliarios (cociente de posibilidades ajustado 2,28; IC95% 1,49–3,49) que los contactos directos (no domiciliarios).
Conclusiones: Se encontró una alta prevalencia de LTBI y de TB activa en los contactos de los casos de TB pulmonar. Las iniciativas de búsqueda activa de casos en los contactos de los pacientes con TB deberían mejorar la detección temprana y reforzar los esfuerzos de control de la TB.

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e-ISSN 2220-8372
Editor-in-Chief: Dermot Maher, MD, Switzerland
Contact: pha@theunion.org
PHA website: http://www.theunion.org/what-we-do/journals/pha
Article submission: http://mc.manuscriptcentral.com/pha