Diagnostic and treatment outcomes of patients with pulmonary tuberculosis in the first year of COVID-19 pandemic

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Abstract

Background: The COVID-19 pandemic has put a significant strain on human life and health care systems, however, little is known about its impact on tuberculosis (TB) patients.

Aims: To assess the impact of COVID-19 pandemic on pulmonary tuberculosis (PTB) diagnosis, treatment and patient outcomes, using the WHO definitions.

Methods: A cross-sectional study was conducted in Malatya region, Turkey (population 800 000). Data on regional PTB test numbers, case notification rates and PTB patients' clinical characteristics and treatment outcomes were collected. Data from the first pandemic year (2020) were compared to data from the previous 3 years (2017–2019). The attitudes and experiences of patients were analysed.

Results: Despite a non-significant 22% decrease in annual PTB case notifications (P = 0.317), the number of TB tests performed (P = 0.001) and PTB patients evaluated (P = 0.001) decreased significantly during the pandemic year compared with the previous 3 years. The proportion of patients with high (3/4+) sputum acid-fast bacilli grades (P = 0.001), TB relapse (P = 0.022) and treatment failure (P = 0.018) increased significantly. The median 64.5-day treatment delay detected in 2017–2019 increased significantly to 113.5 days in 2020 (P = 0.001), due primarily to patients' reluctance to visit a health care facility.

Conclusion: In addition to the problems with case detection, this study shows notable deterioration in several indicators related to the severity, contagiousness and poor outcomes of TB, which had already been suppressed for decades.

Keywords: COVID-19, pulmonary tuberculosis, self-reported symptoms, predictors, sensitivity, specificity

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Introduction

Mycobacterium tuberculosis, one of the oldest pulmonary pathogens in humans, infects around one-third of the global population. An estimated 9.9 million new cases and more than 1.5 million deaths from tuberculosis (TB) were reported in 2021 (*1*). Because no effective TB vaccine exists, it is critical to control the disease through effective diagnosis and treatment as well as the elimination of the suboptimal living conditions that contribute to the spread and reactivation of TB. The End TB Strategy, led by the World Health Organization (WHO), aims to reduce TB-related deaths by 95% and disease incidence by 90% by 2035 through early diagnosis, treatment, collaboration and resource allocation (*2*).

Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) is an emerging pulmonary pathogen that has caused a pandemic affecting the entire global population since the beginning of 2020. Data from WHO have shown that SARS-CoV-2 has infected more than 400 million people worldwide, resulting in around 5.5 million COVID-19 deaths as of January 2022 (*3*). Studies show that the frequency of some neuropsychiatric problems has increased, and quality of life and well-being have been negatively affected while living under pandemic conditions (*4,5*). Survivors of severe COVID-19 often require immune-suppressive medications and have experienced decreased B- and T-cell counts (*6,7*). Significant reductions in hospital admissions of patients with health problems other than COVID-19 have also occurred (*8*). The COVID-19 pandemic has imposed a significant workload on health care facilities, particularly in the departments of chest and infectious diseases, which are critical for TB diagnosis. Therefore, the COVID-19 pandemic has the potential to exacerbate TB burden on societies by negatively impacting health care systems in addition to its effects on personal and social well-being.

A WHO report indicates that substantial disruptions in TB services and case detection have occurred across the world since the beginning of the COVID-19 pandemic (*9*). A study conducted in the WHO European Region reported a decrease of more than one-third in TB case notifications in the second quarter of 2020 compared to the same period in 2019, and suggested that the deterioration in TB services due to the COVID-19 response may impede the region's ability to meet the TB targets of the 2030 Sustainable Development Goals (*10*). Although similar declines in notifications have been reported in several

countries, the details and dynamics of these reductions are not yet clear.

This study aimed to determine changes in diagnostic and treatment processes and treatment outcomes (according to WHO definitions) in patients diagnosed with pulmonary tuberculosis (PTB) in the first year (2020) of the COVID-19 pandemic.

Methodology

Study design, patients

A cross-sectional study was conducted in Malatya, a city located in mid-eastern Turkey with a population of 800 000 inhabitants. Patients in the region who were tested for and diagnosed with PTB between 1 January 2017 and 28 February 2021 were included in the study. Because the study aimed to evaluate the impact of the COVID-19 pandemic on the course of PTB annually, the first pandemic year was defined as the 1-year period from 1 March 2020 (the first COVID-19 case notification in Turkey) to 28 February 2021.

Any patient who was tested for and diagnosed with PTB during the study period and was a resident of the Malatya region was included in the study. Patients with PTB and who had COVID-19 were included to determine the potential impact of this co-infection on the diagnosis and treatment processes and the outcomes of pulmonary tuberculosis. Patients who did not meet these criteria were excluded from the study. Because the COVID-19 pandemic did not impact Turkey's health care system until March 2020, patients diagnosed in January and February 2020 were excluded.

Patients who were tested for and diagnosed with PTB were identified by screening the data from the Public Health Tuberculosis Department of Malatya city and the TB diagnostic laboratory of the region located in the Turgut Ozal Medical Center, a tertiary-level health care facility at the Inonu University Medical Faculty.

This study was approved by the Ministry of Health (2021-01-11T13_01_23; 12 January 2021), the Malatya Clinical Studies Ethical Board (2021/38; 3 February 2021) and the Ministry of Health Malatya Office (04.21/771-1064; 20 April 2021).

Data sources and definitions

Demographic and medical data of patients tested for and diagnosed with PTB during the study period were collected from the electronic and paper records at the Public Health Tuberculosis Department, the Turgut Ozal Medical Center's TB diagnostic laboratory and the health care facilities where patients were evaluated. The WHO criteria were used to define PTB, relapse, clinically diagnosed TB and treatment outcomes (*11*).

A questionnaire was used to collect information from patients diagnosed during the pandemic year about their attitudes, behaviours and experiences with the TB diagnosis and treatment processes. The questionnaire had 8 questions with responses graded on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree". The survey was conducted via phone or in-person interviews. In cases of mortality, juveniles, or mental incapacity, data were obtained from the primary caregiver.

Data analysis

The following data for PTB patients who were diagnosed in the region during the study period were collected and analysed: demographic data (age and sex) of the patients, the acid-fast bacilli (AFB) grades in smear samples, diagnostic features (clinical diagnosis/laboratory-based diagnosis), new case or relapse, comorbidities, treatment outcomes and duration from the onset of symptoms to the initiation of anti-TB treatment. Patients' data from the pre-pandemic (2017–2019) and pandemic (2020) periods were statistically compared.

Quantitative data were presented as median (minimum–maximum) and qualitative data as numbers (percentages). The interquartile range was calculated for the patients' ages. The conformity of quantitative data to the normal distribution was evaluated with the Shapiro–Wilk test. The one-sample chi-square, Mann–Whitney U, Kruskal–Wallis, Conover pairwise comparison and Pearson chi-square tests were used. The significance level was < 0.05. We used *SPSS*, version 26.0, software in the analysis.

Results

Pulmonary tuberculosis case notification rate and test statistics in the region

A total of 2970 patients were evaluated for PTB in the region during the study period. The median age of the patients was 54 years and 60.5% of them were male.

The region's PTB case notification rate decreased to 6.51 per 100 000 population during the pandemic year, a nonsignificant 22.0% drop from the previous 3 years. This rate was 8.53 in 2017, 7.85 in 2018 and 8.94 in 2019. When compared to the average values of the previous 3 years, the annual number of PTB tests, the number of patients tested and the average number of diagnostic test sets per patient all decreased significantly during the pandemic year, by 47.4%, 39.6% and 20.0%, respectively. Table 1 presents the number of PTB laboratory tests performed and number of patients evaluated for PTB by study year in the region.

Characteristics of patients

During the study period, 252 patients with PTB were diagnosed, with a median age of 48 years and 156 (61.9%) of them were male. In 2020, 52 PTB patients (61.5% male, median age 51 years) were diagnosed, with 67, 62 and 71 PTB patients notified in 2017, 2018 and 2019 respectively.

During the pandemic year (2020), the number of PTB patients with 3 or 4+ AFB grades in smear microscopy increased significantly to 27 (51.9%), compared to 6 (9.0%), 2 (3.2%) and 7 (9.8%) in 2017, 2018 and 2019 respectively. In

Table 1 Number of pulmonary tuberculosis laboratory tests performed and number of patients evaluated for PTB, Malatya, 2017–2021

Item/ characteristic	Pre-pandemic year			Pandemic year	P-value
	2017	2018	2019	2020–2021	
Age (years): median (min–max), IQR	54 (0–95), 51.5	56 (0–96), 52	55 (0–95), 51	52 (0–92), 51	0.262[a]
	No. (%)	**No. (%)**	**No. (%)**	**No. (%)**	
TB tests performed for PTB	1884 (27.2)	2136 (30.9)	1864 (27.0)	1031 (14.9)	0.001[b]
Patients tested for PTB	875 (29.5)	840 (28.3)	757 (25.5)	498 (16.8)	
Sex					
Female	363 (41.5)	340 (40.4)	305 (40.3)	171 (34.3)	0.061[c]
Male	512 (58.5)	500 (59.5)	452 (59.7)	327 (65.6)	
Patients diagnosed with PTB	67 (26.6)	62 (24.6)	71 (28.2)	52 (20.6)	0.361[b]
	Mean (SD)	**Mean (SD)**	**Mean (SD)**	**Mean (SD)**	
TB test sets per patient[d]	1.97 (1.34)	2.32 (1.52)	2.2 (1.40)	1.73 (1.26)	0.001[a]
	No./100 000	No./100 000	No./100 000	No./100 000	
Regional PTB case notification rate[e]	8.53	7.85	8.94	6.51	0.317[b]

IQR = interquartile range. AFB = acid-fast bacilli. SD = standard deviation. [a]Kruskal–Wallis H test. [b]One-sample chi-square test. [c]Pearson chi-square test. [d]TB test set included AFB microscopy+TB culture±TB-PCR. This parameter was calculated according to the TB test set performed for diagnostic purposes by excluding the TB tests performed after diagnosis (i.e. tests for follow up the treatment effectiveness). [e]Annual population size in the province was obtained from the Turkish Statistics Institution.

the previous 3 years, the rate of clinical diagnosis ranged between 13.4% (in 2017) and 18.3% (in 2019), but it dropped insignificantly to 7.7% during the pandemic year (2020).

In the pandemic year (2020), the number of PTB patients who relapsed and the number who delayed attending the Public Health Tuberculosis Department to start anti-TB treatment by more than 7 days increased significantly when compared to pre-pandemic years (2017–2019).

When the treatment outcomes of patients who completed a 6-month standard anti-TB treatment were compared to the previous 3 years (2017–2019), a statistically significant increase in treatment failure was found during the pandemic year (2020).

Between the pandemic year (2020) and the pre-pandemic years (2017–2019), there was no statistically significant difference in the patients' co-morbidities, the rate of mortality during treatment, the number of patients with PTB-related hospitalization, or the length of hospital stay (Table 2).

Duration of diagnosis and treatment processes

Patients diagnosed with PTB between 2017 and 2019 received treatment within a median of 64.5 days of symptom onset, but this increased significantly to 113.5 days during the pandemic year (2020). In 2020, there were significant delays in the median time taken for a doctor's appointment and to apply to the Public Health Tuberculosis Department to start treatment after a PTB diagnosis (Table 3).

Experiences of pulmonary tuberculosis patients in the pandemic year

Out of 52 PTB patients diagnosed during the pandemic year (2020), 48 were queried. A total of 31 (65.0%) PTB patients reported that they would have sought medical care earlier if there was no pandemic; 20 (41.7%) patients delayed seeking medical care due to fear of contracting COVID-19 in the health care facilities; 16 (33.3%) delayed seeking medical care due to "stay at home" advice; 20 (41.6%) had difficulty finding a doctor; 35 (72.9%) had a later appointment time than previous visits and 9 (18.8%) perceived that they received less medical attention compared with prior experiences.

Pulmonary tuberculosis patients with COVID-19

In total, 9 PTB patients diagnosed during the pandemic year also had COVID-19. One patient with severe COVID-19 died. Another patient who was diagnosed with PTB following severe COVID-19 was recorded as a COVID-19-mediated PTB recurrence. Two PTB patients who also contracted COVID-19 remained positive for *M. tuberculosis* complex during the fifth month of the anti-TB treatment.

Discussion

In this study, we found significant reductions in the number of PTB patients diagnosed in Malatya during the first year of the COVID-19 pandemic. Similar reductions in TB case notification have been reported in other parts of the world; for example, the Pan American Health Organization reported that PTB case notification in continental America decreased by 15–20% during 2020 (*12*).

Nguyen et al. reported that the diagnosis of around 20% of PTB cases required 4 or more sputum samples or deep pulmonary sampling because 2 or 3 previous samples showed negative results (*13*). Therefore, a strong clinical suspicion is essential in PTB diagnosis. We compared the average number of TB tests performed for each patient by year. This parameter could be regarded

Table 2 Comparison of the characteristics of 252 pulmonary tuberculosis patients who were diagnosed in Malatya, 2017–2021

Characteristic	Pre-pandemic year			Pandemic year	*P*-value
	2017	2018	2019	2020–2021	
Age (years): median (min–max), IQR	52 (17–85), 51.5	50 (13–86), 48.5	46 (12–90), 43	51 (17–88), 43.5	0.310[a]
	No. (%)	No. (%)	No. (%)	No. (%)	
Sex					
Female	20 (29.9)	29 (46.8)	27 (38.0)	20 (38.5)	0.271[b]
Male	47 (70.1)	33 (53.2)	44 (62.0)	32 (61.5)	
AFB microscopy					
Negative	23 (34.3)	30 (48.4)	35 (49.3)	13 (25.0)	0.001[b]
1+	33 (49.3)	27 (43.5)	20 (28.2)	7 (13.5)	
2+	5 (7.5)	3 (4.8)	9 (12.7)	5 (9.6)	
3+	2 (3.0)	1 (1.6)	4 (5.6)	11 (21.2)	
4+	4 (6.0)	1 (1.6)	3 (4.2)	16 (30.8)	
Basis of diagnosis					
Laboratory-based	58 (86.6)	51 (82.3)	58 (81.7)	48 (92.3)	0.345[b]
Clinical	9 (13.4)	11 (17.7)	13 (18.3)	4 (7.7)	
Recurrence					
New case	61 (91.0)	58 (93.5)	66 (93.0)	42 (80.8)	0.022[b]
Relapse	6 (9.0)	4 (6.5)	5 (7.0)	10 (19.2)	
Hospitalized patients	20 (29.9)	22 (35.5)	29 (41.4)	21 (40.4)	0.499[b]
Treatment process					
Patients for whom treatment initiation delayed > 7 days	7 (10.4)	5 (8.1)	6 (8.5)	14 (26.9)	0.007[b]
Treatment failure[c]	1 (1.9)	0 (0.0)	1 (1.9)	7 (17.0)	0.018**
Outcome					
Mortality during treatment	5 (7.5)	8 (12.9)	5 (7.0)	7 (13.5)	0.338[b]
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Duration of hospitalization (days)	2.55 (7.26)	3.02 (6.34)	1.92 (3.74)	4.48 (8.81)	0.534[b]

IQR = interquartile range. AFB = acid-fast bacilli. SD = standard deviation. [a]Kruskal–Wallis H test. [b]Pearson chi-square test. [c]This analysis included the patients who were able to complete a 6-month TB treatment regime, therefore, the patients who were diagnosed clinically or died before the treatment conclusion were excluded.

as a measurable indicator of the medical attention that should be provided to each patient and the degree of clinical suspicion that necessitates a thorough clinical evaluation. We found that the average number of TB tests performed per patient decreased significantly by up to a quarter in the pandemic year (2020). In spite of the significant decrease in number of TB tests, the reduction in number of PTB patient notifications in 2020 was not statistically significant. This finding could be due to an increase in the number of patients with obvious clinical symptoms, and suggests that a proportion of PTB patients, particularly those with ambiguous clinical PTB presentation, may have gone unnoticed during 2020.

We found that the AFB grades of PTB patients increased substantially in the pandemic year (2020). A high sputum bacilli load was associated with the highest relative risk of transmission or active PTB among contacts (*14*). Given that people had been advised to stay at home since the emergence of COVID-19, the risk of indoor TB exposure may have increased during that year.

About 13% of patients with TB were diagnosed clinically, and required further interventions (i.e. biopsy, histopathology) and evaluations because the TB tests were negative (*13*). Although not statistically significant, the number of patients diagnosed clinically decreased by more than half in 2020. This could indicate that a proportion of PTB patients who would have been diagnosed clinically may not have been detected in the first year of the COVID-19 pandemic.

Recurrent PTB may yield poorer outcomes, including death and treatment failure (*15*). Estimates from WHO indicate that about 7% of PTB patients diagnosed annually are relapsed (*9*). In Turkey, TB recurrence gradually declined from 9.7% to 7.8% between 2006 and 2017 (*16*). We found more than 2-fold increase in the rate of relapsed PTB patients during the first pandemic year. This could be due to personal factors influenced by the pandemic such as increased psychological stress, deteriorated living standards and limited or delayed access to medical care for any chronic disease.

Despite the increasing number of patients with high bacilli load, treatment failure and recurrence, we found no significant increase in the rate of hospitalized PTB patients and length of hospitalization in 2020. This

Table 3 Comparisons of the time intervals from the onset of PTB symptoms to the start of anti-TB treatment in PTB patients diagnosed in Malatya, 2017–2021

Time interval (days)	Pre-pandemic year			Pandemic year	*P*-value[a]
	2017	2018	2019	2020–2021	
	Median (min–max)	Median (min–max)	Median (min–max)	Median (min–max)	
Time to doctor visit after onset of TB symptoms	45 (7–360)	60 (7–360)	50 (7–360)	89 (13–356)	0.001
Doctor's appointment time	1 (0–4)	1 (0–4)	1 (0–5)	5 (0–40)	0.001
Time to PTB diagnosis after sample delivery	1 (0–55)	2 (0–76)	2 (1–61)	1.5 (0–58)	0.775
Time to access treatment after diagnosis	1 (0–120)	1 (1–135)	1 (0–52)	3 (0–39)	0.001
Total treatment delay	62 (10–367)	678 (9–361)	65 (10–405)	114 (13–387)	0.001

[a]*Kruskal–Wallis H test.*

could be due to patients' reluctance to be hospitalized, or clinicians' attitudes about reserving beds for patients with more acute cases.

In the first pandemic year, we found significant increases in the number of PTB patients who were still positive for smear AFB microscopy and/or TB culture in the fifth month of the treatment, which is defined as treatment failure according to WHO criteria (*11*). Research has shown that cavitary lung lesions, diabetes, high bacilli load in smear microscopy and recurrent TB are predictors of treatment failure (*17,18*). Given that no difference was observed in PTB patients' characteristics in terms of diabetes and cavitary lesions in the years studied, we surmised that increasing treatment failure in the first pandemic year was most likely related to increases in high AFB load and relapses during that time.

One study reported a median of 62 days for PTB patients to initiate anti-TB treatment after clinical symptoms first appeared (*19*). We compared 5 different periods in the diagnostic and treatment processes of PTB by study year. The "time to doctor's visit after TB symptoms", which could be considered one of the indicators of patients' care-seeking behaviour, was found to have almost doubled in 2020. In another period, "doctor's appointment time" – which could also be viewed as an indicator of the health system's ability to cope with the increased patient load caused by the COVID-19 pandemic – was found to have increased to a median of 5 days in the 2020 pandemic year, whereas it was usually a same-day procedure between 2017 and 2019. The "time to PTB diagnosis after sample delivery" (which could also be used to assess the laboratory's performance in PTB diagnosis) showed no delay; in contrast, an average decrease of 2 days was observed in 2020. This finding was an unexpected result and likely occurred due to the significant decrease in TB test orders in that year. There was a significant delay in the "time to access treatment after diagnosis" in 2020, which could be another indicator of patients' care-seeking behaviour. The period "total time", as the sum of treatment delays including patient- and health service-dependent delays, increased substantially, as much as 1.7-fold, in 2020. PTB patients diagnosed during the pandemic year (2020) were able to access anti-PTB treatment about 40 days later than patients diagnosed previously. Using a statistical method of survival analysis in future studies will help determine more accurate results for such delays.

To clarify the factors contributing to these delays, we queried patients who were diagnosed with PTB in 2020. A significant proportion of PTB patients delayed seeking care due to pandemic-related factors (such as stay-at-home orders and the fear of becoming infected with SARS-CoV-2 in health care facilities), had difficulty seeing a doctor and received less medical attention in 2020. Patients' responses indicated that during the pandemic, PTB patients experienced hesitation to seek medical help and problems in accessing effective diagnosis and treatment.

We analysed 9 PTB patients diagnosed in the pandemic year (2020) who also had COVID-19 because a co-infection could influence the diagnostic and treatment process as well as treatment outcomes. Although 3 of these 9 patients had shown TB symptoms for up to 6 months, they were ultimately diagnosed with PTB during medical evaluations performed during their hospital stay for COVID-19. This finding is additional evidence that patients postponed their visits to the doctor in 2020 until it was necessary. A patient who received 1-month prednisolone due to severe COVID-19 developed treatment failure for TB. Five of these 9 patients developed COVID-19 during their anti-TB treatment but did not experience any health problems due to their co-infection. The last one of the 9 PTB patients was considered to have a COVID-19-mediated PTB relapse because that patient had no PTB symptoms before acquiring COVID-19. Due to severe COVID-19, this patient was hospitalized for about 34 days, had lymphopenia for 2 weeks and received prednisolone therapy for 2 months. This patient was diagnosed with PTB on the 22nd day following termination of corticosteroid therapy and developed treatment failure.

COVID-19-mediated dysfunctions in effector lymphocytes may not improve completely even 6 months after infection (*20*), and many patients with severe

COVID-19 receive corticosteroids to prevent lung damage. These immune-system problems may offer favourable conditions for TB bacilli to progress, the bacterium can survive in tissues for decades even in immunocompetent individuals. We identified PTB relapse and treatment failures in our patients, which could be attributed to severe COVID-19. When the distribution of both infections is considered, it can be predicted that such interactions between TB and COVID-19 could result in a global health problem.

In this study, only PTB patients were investigated. Therefore, it is unknown how the pandemic affected the diagnosis and treatment processes and outcomes in patients with extrapulmonary TB. We conducted this study in a region where two-thirds of the health care capacity was never exceeded due to the pandemic, and the region's TB diagnostic laboratory managed to continue to provide routine service in the meantime. As a result, PTB patients in our region did not experience extensive difficulty accessing basic diagnostic and therapeutic services during the first pandemic year. Given these limitations, we believe that the COVID-19 pandemic would result in greater regressions in TB case detection in areas where health care capacity was exceeded or TB laboratories were used for SARS-CoV-2 diagnosis.

This study shows that more PTB patients may have gone undetected in the province during the pandemic year (2020) as a result of emerging problems in case detection due to changing health care-seeking behaviour among patients and the high workload at health care facilities. In addition to the increased TB burden, an increase in the number of undiagnosed patients in a population can trigger further problematic consequences, such as increased TB-related deaths, as predicted by WHO (*9*).

Our study reveals that the COVID-19 pandemic may worsen the severity and contagiousness of PTB as well as the success of anti-TB treatment. Therefore, to prevent subsequent threats of TB resurgence, the global community must increase its efforts in raising awareness in addition to educating and encouraging people to access medical aid. As further pandemics may emerge in the years to come, appropriate strategies must be reconsidered to sustain the goals of controlling TB.

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Competing interests: None declared.

Résultats diagnostiques et thérapeutiques des patients atteints de tuberculose pulmonaire au cours de la première année de la pandémie de COVID-19

Résumé

Contexte : La pandémie de COVID-19 a mis à rude épreuve la vie humaine et les systèmes de soins de santé, mais on sait peu de choses sur son impact sur les patients atteints de tuberculose.

Objectifs : Évaluer l'impact de la pandémie de COVID-19 sur le diagnostic, le traitement et les résultats des patients atteints de tuberculose pulmonaire (TBP), en utilisant les définitions de l'OMS.

Méthodes : Une étude transversale a été réalisée dans la région de Malatya, en Turquie (population de 800 000 habitants). Des données sur le nombre de tests régionaux de tuberculose pulmonaire, les taux de notification des cas, les caractéristiques cliniques des patients atteints de tuberculose pulmonaire et les résultats des traitements ont été collectées. Les données de la première année de la pandémie (2020) ont été comparées aux données des trois années précédentes (2017-2019). Les attitudes et les expériences des patients ont été analysées.

Résultats : Malgré une diminution non significative de 22 % des notifications annuelles de cas de tuberculose pulmonaire (p = 0,317), le nombre de tests de dépistage de la tuberculose effectués (p = 0,001) et de patients atteints de tuberculose pulmonaire évalués (p = 0,001) a considérablement diminué pendant l'année pandémique par rapport aux trois années précédentes. La proportion de patients présentant des niveaux élevés (3/4+) de bacilles acido-alcoolo-résistants dans les expectorations (p = 0,001), de rechute tuberculeuse (p = 0,022) et d'échec thérapeutique (p = 0,018) a augmenté de manière significative. Le retard médian du traitement de 64,5 jours détecté en 2017-2019 a considérablement augmenté pour atteindre 113,5 jours en 2020 (p = 0,001), principalement en raison de la réticence des patients à se rendre dans un établissement de santé.

Conclusion : Au-delà des problèmes de détection des cas, la présente étude montre une détérioration notable de plusieurs indicateurs liés à la gravité, à la contagiosité et aux mauvais résultats de la tuberculose, que les programmes de lutte avaient déjà supprimés depuis des décennies.

نتائج التشخيص والعلاج لمرضى السل الرئوي في السنة الأولى من جائحة كوفيد-19

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الخلاصة

الخلفية: تسببت جائحة كوفيد-19 في ضغط كبير على حياة البشر ونُظُم الرعاية الصحية، إلا أننا لا نعرف إلا القليل عن تأثيره على مرضى السل.

الأهداف: هدفت هذه الدراسة الى تقييم أثر جائحة كوفيد-19 على تشخيص السل الرئوي وعلاجه والنتائج المتحققة للمرضى، باستخدام تعريفات منظمة الصحة العالمية.

طرق البحث: أُجريت دراسة مقطعية في منطقة ملاطيا بتركيا (عدد السكان 800 ألف نسمة). وجمع الباحثون بيانات المنطقة عن عدد اختبارات السل الرئوي، ومعدلات الإخطار بالحالات، والخصائص السريرية لمرضى السل الرئوي، ونتائج العلاج. وبعد ذلك، قارن الباحثون بيانات السنة الأولى من الجائحة (2020) ببيانات السنوات الثلاثة السابقة (2017–2019)، مع تحليل مواقف المرضى وتجاربهم.

النتائج: على الرغم من الانخفاض غير الكبير بنسبة 22٪ في العدد السنوي للإخطارات بحالات الإصابة بالسل الرئوي (القيمة الاحتمالية = 0.317)، فإن عدد اختبارات السل التي أُجريَت (القيمة الاحتمالية = 0.001) وعدد مرضى السل الرئوي الذين أُجريَ لهم تقييم (القيمة الاحتمالية = 0.001) قد انخفض انخفاضًا كبيرًا خلال السنة الأولى للجائحة مقارنةً بالسنوات الثلاث السابقة. وحدثت كذلك زيادة كبيرة في نسبة المرضى الذين لديهم تشبُّع عالٍ بالعصيات الصامدة للحمض في عينات البلغم (+4/ 3) (القيمة الاحتمالية = 0.001)، ونسبة انتكاس السل (القيمة الاحتمالية = 0.022) وفشل العلاج (القيمة الاحتمالية = 0.018). وزادت القيمة الوسطى لمدة تأخر العلاج، التي كانت 64.5 يومًا في الفترة من 2017 إلى 2019، زيادة كبيرة لتصل إلى 113.5 يومًا في عام 2020 (القيمة الاحتمالية = 0.001)، ويرجع ذلك في المقام الأول إلى إحجام المرضى عن زيارة مرافق الرعاية الصحية.

الاستنتاجات: بالإضافة إلى المشكلات المتعلقة باكتشاف الحالات، تُظهر هذه الدراسة تدهورًا ملحوظًا في العديد من المؤشرات المتعلقة بشدة مرض السل والعدوى به وضعف النتائج بين المصابين به، وذلك بعد أن نجحَت برامج المكافحة في قمع تلك المؤشرات لعقود من الزمن.

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