Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Pulmonology 28 (2022) 421–422

PULMONOLOGY

www.journalpulmonology.org

EDITORIAL

COVID-19 pandemic and tuberculosis: How to ensure adequate care in pediatric age

As expected that the SARS-CoV-2 pandemic played an important role in the prevention and control of tuberculosis status. The investment needed to contain the pandemic has negatively influenced resources to control other infections.[1] The 2020 lockdown has hampered access to health care, potentially delaying the diagnosis and treatment of tuberculosis. Glaziou P. predicted that tuberculosis incidence would slowly decline with a potential rebound by increased duration of infectiousness and decreased case detection during lockdown.[2] The chains of transmission of pediatric tuberculosis would be affected: transmission in home clusters (the main focus of exposure in children) would increase, while transmission in social settings should decrease.[1,3]

There is a network of Tuberculosis Outpatient Centers within the Portuguese National Health Service. Since 2010 there is a Pediatric TB Reference Center in the North of Portugal, the first in the country. The Center has the aim of screening and diagnosing pediatric TB, with a multidisciplinary team with pediatric specialization. The team includes 2 pediatricians with experience in childhood TB, a nurse, a pulmonologist, an infectious disease specialist, a radiology technician and administrative technicians. Teams with experience in pediatric age and pediatric TB should be involved in the care of these patients.[1]

To face the constraints imposed by the pandemic situation, the following measures were implemented:

1. When possible (e.g., pediatric patients being treated for latent infection, cases of surveillance after completing treatment), consultations were conducted by telephone, with parental consent. When there were concerns that warranted additional observation, a face-to-face consultation was scheduled as soon as possible. Although not unknown, telephone consultations were rare before the pandemic.
2. In cases of patients who required blood analysis control, e.g., in cases of side effects, requests were sent via text message to patients' cell phones. The analysis was scheduled in a laboratory with an agreement in the national health system; the results were sent via email to the pediatrician. This facility still exists. In the case of sputum collection, this was carried out in a room at the Center or at the patient's home. Hospitalizations for diagnostic investigation (such as gastric aspirate collection and bronchoalveolar lavage) were kept in the Pediatric Department of the local hospital.
3. The first consultations were made in person to allow for physical examination, chest radiography, and immunological tests (scheduled for the same day). Consultations were also in person when there was a change in the clinical status or during the transition periods from induction to maintenance medication.
4. Referral patients from the emergency department and hospital appointments with suspected or confirmed TB was facilitated as previously, as the pediatricians work at both locations.
5. Chest computed tomography (CT) scans were performed at the local hospital, after a PCR test for SARS-CoV-2. CT interpretation was performed by the radiology team. Before the pandemic, it was easier to perform this imaging test in clinics with an agreement in the national health system. Chest X-ray was performed at the Center and its interpretation was made by the pediatricians' team, as before.
6. Before the pandemic, directly observed treatment (DOT) was in person. In cases of active tuberculosis, DOT was maintained. In bacilliferous cases, the nurse would still visit the patient's home. In the presence of possible poor compliance factors, DOT was maintained by the patient's family nurse. In the remaining cases, DOT was done in person, once a week, and medication was provided for that period, with telephone contact by the nurse to ensure compliance. In children on preventive treatment, medication was provided for a longer period (1 to 3 months).
7. Coordination with public health services was maintained with monthly online meetings to discuss cases and ensure the screening of families or groups exposed. As in the

https://doi.org/10.1016/j.pulmoe.2022.06.009

past, migrant children are considered at risk and candidates for BCG administration if they come from countries with a high incidence of TB.

A retrospective descriptive analysis was performed, based on medical records, comparing the type of referrals, number of consultations, and the diagnosis of pediatric patients followed up from January 2019 (pre-pandemic year) to December 2020 (pandemic year). There was a total of 721 medical consultations in 2019 compared to 580 in 2020. These numbers represent a 19.6% decrease, with a greater reduction in subsequent in person consultations (-53%). First medical consultations were also reduced (-12.2%). Telephone consultations increased significantly (+87.4%). Patients observed for suspected active disease reduced by 21.1%, and for tuberculosis screening by 10.6%. In 2020, 12 patients started antituberculosis drugs for active tuberculosis, compared to 7 patients in 2019. The diagnosis of latent tuberculosis infection was made in 12 cases in 2020 and in 13 cases in 2019. Fewer missed consultations (-56.8%) were noticed in 2020. There were no treatment abandonments in the two periods. No significant side effects were reported during these years.

Following the covid pandemic restrictions at the beginning of 2020, the team was able to maintain quality services. We verified that the number of diagnosed latent infections and active cases of tuberculosis remained unchanged. The data shows no decrease in referrals to the center. The team believes that it successfully overcame the difficulties in maintaining clinical activity, mostly due to effective digital monitoring and easy accessibility to the Center.

Rodrigues et al recently reported the activity of Outpatient Tuberculosis Centers in Portugal with the adult population during the pandemic. It was observed that there were fewer outpatient visits to the Centers, probably due to a decrease in referrals by other health units. As in our pediatric Center, the DOT strategy was modified. It should be noted that 25% of the Centers reported using DOT only in high-risk patients and 18.7% did not use it at all. Unlike our Center, there was an increase in missed consultations from the beginning of the pandemic. The authors expressed concern about the delays in diagnosing active disease.[4]

The emergence of COVID-19 should not relax the measures and efforts to maintain a reduction in TB incidence. In Portugal, access to Outpatient TB Centers remains free and easy. Follow-up by trained pediatricians in these types of community Outpatient TB Centers allows for better management of pediatric TB disease. Even in times of difficulty, such as during the pandemic, the level response in tuberculosis cases can be maintained if assistance is adapted.

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Received 4 May 2022; Accepted 15 June 2022
Available online 28 June 2022