

Active screening for pulmonary tuberculosis by chest X-ray among immigrants at the Swiss border

Antonela Silivan, Jean-Paul Janssens

To the editor:

We read with great interest the article by C Mathez et al. [1] that retrospectively analyses the efficacy of active screening for tuberculosis (TB) by chest X-ray (CXR) in asylum seekers at the border and compares the prevalence of symptoms suggestive of TB in immigrants with vs. without TB. Among 8995 immigrants screened, 125 (1.4%) had a CXR suggestive of TB; 50 were culture+ (C+: 0.5%), and 27: smear and culture+ (S+/C+: 0.3%). Although cough was more frequent in S+/C+ subjects, 18% of S+/C+ subjects did not report any symptom; among S-/C+ subjects, 35% did not cough, and 25% were asymptomatic. Conversely, 37% of smokers among immigrants without TB had a chronic cough and 55% mentioned at least one symptom suggestive of TB.

We recently performed a study of all asylum seekers with an abnormal CXR actively screened at the border and subsequently referred to the canton of Geneva (Jan 2001 – Dec 2005) [2]. During this 5-year period, 4874 asylum seekers were screened of which 88 (1.8%) had CXR abnormalities suggestive of TB; 31 (0.6%) were treated for active TB; 20 (0.4%) had C+ TB, of which 9 (0.2%) were S+/C+. Thus one out of every 157 CXR led to a diagnosis of culture-confirmed TB and one CXR out of every 541 identified a case of S+/C+ TB (respectively one of 180 and one of 817 in the study by C Mathez et al. [1]). These results are corroborated by reports from the Swiss Federal Office of Public Health (OFSP): an estimated 450 CXR are necessary in this population to detect one case of S+/C+ TB [3].

Based on these figures, the OFSP estimates that 4500 CXR are necessary to avoid one secondary case of TB in the indigenous population, and therefore, that CXR screening is not cost effective [4]. A symptom-based screening (including incidence of TB in country of origin, and global assessment of health status by the interviewing nurse as important variables) has thus been chosen as an alternative to CXR screening by federal authorities. Although as stated by C Mathez, this option is under prospective assessment, its efficacy will not be established through a randomized controlled trial, as should have been the case initially. The epidemiological consequences of these changes will be difficult to assess, since they will mainly affect a socially and geographically unstable population, most of whom will lose their legal status and remain illegal in Switzerland.

The data presented by C Mathez et al. underline the limitations of a symptom-based assessment and are confirmed by others [5, 6]. In our study [2], among 20 patients with C+ TB,

nine (44%) had no symptoms and 12 (60%) no respiratory symptoms. Frequency of respiratory symptoms (36% vs. 25%), systemic symptoms (42% vs. 25%) or absence of symptoms (45% vs. 63%) did not differ significantly between patients with abnormal CXR with vs. without TB. The symptom score presently used for screening for TB in asylum seekers was estimated in 18 patients with C+ TB: 13 had results so low as to render further testing unnecessary. In a similar population, M Monney et al. reported that 49% of asylum seekers actively screened at the border were symptom-free [7].

Although several studies show that transmission of TB from migrants to the indigenous population is exceptional, migrants represent an increasingly high proportion of the total burden of TB cases in many European countries [8]. In Switzerland, between 2001 and 2004, 24% of all cases of TB occurred in asylum seekers [3]. The assessment of the cost-effectiveness of CXR screening by the OFSP ignores the fact that approximately 120 cases of active TB were discovered annually among asylum seekers and that these cases must receive proper care and be treated, irrespective of their legal status. Mathez et al. suggest that the efficacy of active screening in their study was low [1]. We disagree with this conclusion. In fact, case detection by active CXR screening in this population was superior to that of usual contact tracing after exposure to TB in our area and less expensive [9]. Conversely, relying only on primary care may delay diagnosis and treatment, and increase the risk of more extensive and severe disease. A recent study of 250 cases of TB in Geneva [10] showed that the median delay between symptoms and diagnosis for TB is 2½ months, with extremes reaching 6 months!

These observations suggest that medical authorities should aim to maintain an optimal efficacy of TB screening *whenever possible* in high risk migrants, not necessarily to protect the indigenous population, but mainly to ensure a rapid diagnosis and treatment of an increasing proportion of TB cases in our country, even if these measures represent only a partial response to this growing problem.

Correspondence:

Dr Jean-Paul Janssens
Centre antituberculeux
Hôpital Cantonal
CH-1211 Geneva 14
Switzerland
E-Mail: Jean-Paul.Janssens@bcuge.ch

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Authors' Reply

We thank A. Silivan and J.-P. Janssens for their interest in our study and for their pertinent comments. We would like to take this opportunity to stress some of the points addressed in their letter.

Firstly, we would like to correct some data mentioned in the letter: in our population of asylum seekers, within one year, 11 cases were detected with positive smear and culture for *M.tbc*, 16 with negative smear but positive culture and 23 with negative smear and culture but considered in need of treatment. Thus, among 50 cases notified and treated for TB out of a population of 8995 immigrants or 125 persons with a CXR suggestive of TB, only 22% were confirmed and not 40%.

Secondly, we would like to mention the fact that TB can be detected among asylum seekers or refugees not only at the border by an examination at entry but also at a later time point, considering the fact that many immigrants claiming for asylum will stay in Switzerland for several months or even years and may develop the disease long after entry. In fact, once again, in 2004, only 50 cases of TB were discovered at the border out of 120 cases notified the same year among all immigrants living in Switzerland. In order to avoid some of the reactivations observed among immigrants living in Switzerland, a strict policy of detection of latent tuberculosis infection and preventive treatment should be implemented. A prior study has demonstrated that this is currently not feasible in practice [1]. Future studies will show if the screening with Interferon Gamma Release Assays, which has started in several countries, will facilitate the management of immigrants with latent infection.

Furthermore, as mentioned by A. Silivan and J.-P. Janssens, we are all aware that one of the main problems is the long delay between the initial symptoms and the diagnosis of TB, but this applies not only to immigrants but also to other patients living in Switzerland, including Swiss

citizens with easy access to health care. Another problem, which is not addressed by any screening system at the border, is the fact that immigrants without legal status represent one of the population groups with the highest risk of undetected TB. We recently observed two cases of active TB among a group of 116 undocumented immigrants examined prospectively in Lausanne.

Finally, we agree with A. Silivan and J.-P. Janssens, and our study confirms, that symptoms alone are not sensitive enough to allow the detection of all cases of TB, particularly incipient cases. Any screening system has to consider other individual and epidemiological risk factors and take into consideration all possible obstacles such as language and representation of health and dis-

ease among immigrants with a cultural background different from our own [2]. However, considering that the total number of cases discovered at the border is only a part of the total number of cases notified in the country, we believe that the main effort should be in a better sensitization of all practitioners and hospital doctors to ensure a timely diagnosis of tuberculosis.

*Dr Christian Mathez
Dr Jean-Pierre Zellweger
Department of ambulatory care
and community medicine
University of Lausanne*

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