



# Prevalence of latent TB infection among asylum seekers in emergency accommodation in Cologne, Germany

To the Editor:

German legislation for asylum seeking and infection prevention and control requires asylum seekers to undergo mandatory screening for active tuberculosis (TB) on entry [1, 2]. However, there is no routine screening for latent TB infection (LTBI). Systematic data on LTBI among this population are lacking, although the risk of progression from latent to active TB is higher among migrant populations [3, 4]. Therefore, this population has to be seen as vulnerable for the development of active TB.

We present data on the prevalence of LTBI from data collected by the municipal health authority of Cologne following the incidence of two independent cases of active TB in an emergency accommodation for men.

The emergency accommodation was a temporary lightweight hall erected in 2015. In the open hall, up to 100 asylum seekers were accommodated in camp beds and later in bunk beds after the hall was partitioned in mid-2016 with up to six people in a room. Inhabitants were males from at least 19 countries of origin.

Due to diagnosis of the first index case with smear negative, culture-positive TB in August 2016, the municipal health authority conducted a contact investigation. In this particular crowded setting, contact times and intensity were very hard to establish on an individual basis. Therefore, all 84 co-inhabitants during the time of potential transmission were examined at least 8 weeks after the last possible contact with the initial index case.

During this process, a second case of TB was suspected in October 2016. Following the confirmation of the diagnosis, a second round of contact investigation was performed including 104 persons. This index case was in a very early phase of the disease and was later identified as being part of a multidrug resistant cluster from the Horn of Africa [5]. A total of 43 inhabitants were contact persons for both index cases. Hence, we report the results of 145 contact individuals overall.

Data for the contact investigation were collected between August 2016 and January 2017. All inhabitants and staff members (not reported here) who had been in contact with the index cases were examined for signs of active TB and blood was drawn by trained staff from the municipal health authority for interferon- $\gamma$  release assays (IGRA) (Quantiferon Gold R (QFT); Qiagen, Hilden, Germany). Sample processing followed the manufacturer's instructions. QFT analysis was carried out by a certified external laboratory. After exclusion of active TB, a QFT result of  $>0.35$  was regarded as a positive diagnostic for LTBI, although the positive predictive value of QFT varies according to a given prevalence [6] and could be expected to be  $\sim 85\%$  in this scenario. Individuals with a positive QFT assay result underwent chest radiography, and received counselling for signs and symptoms of TB. All individuals who were QFT positive during the first contact investigation round and were also potential contacts for the second case were only clinically examined in the second round and received a repeat chest radiograph during follow-up.

Since data collection was part of a legally binding process under the infection prevention law no individual informed consent was required. Staff and inhabitants of the accommodation received information on the



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**~12% of male asylum seekers from multiple countries were diagnosed with LTBI. Systematic documentation and reporting of LTBI, access to chemopreventive therapy, and early diagnosis of active TB are highly recommended for this vulnerable group.** <http://ow.ly/dVTp30nmaR>

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incident TB cases and the process of conducting contact investigations. The process was well accepted. All results were communicated to the individuals participating in the contact investigations, with the exception of asylum seekers who had left the accommodation and were no longer traceable, none of whom was QFT positive.

The mean age of the 145 males was 27 years (range 18–58 years). A total of 18 individuals had a QFT >0.35 (12.4%). Since one of these persons had active TB, the resulting number of LTBI cases was 17 (11.7%). The geographical origin of the contact persons included the Middle East, Central Asia and Africa (figure 1).

No contacts who tested QFT-negative in the first round and were contacts for the second index case experienced a conversion. The 17 identified cases of LTBI did not receive chemopreventive therapy (CPT) because of a likely change of residence within the city or country, insufficient access to the formal health system, poor opportunities for medical follow-up and language barriers. Up to 19 months of follow-up, 14 persons with LTBI still lived in Cologne and the health authorities received no subsequent notification of active TB among these LTBI cases. For the remaining cases it is highly likely that the health authority of the city or district of residence would have contacted the authority in Cologne in case of disease progression.

In this group of male adults from various countries with considerable differences in reported TB incidence in their country of origin, the prevalence of LTBI was ~12%. This number contributes data which is scarce for Germany and concurs with a report from the federal state of Thuringia where an QFT positivity of 11% among 2431 screened asylum seekers was reported [7]. Although transmission within the accommodation cannot entirely be excluded, the characteristics of both index cases make transmission within the setting unlikely.

In Germany, as in other European countries, the risk for TB is higher among foreign-born populations. In 2016, 69.1% of the incident TB cases in Germany occurred in foreign-born patients [8–11], with the majority occurring in the age group 15–40 years [12]. At the same time, asylum seekers' access to and engagement with the health system of Germany is limited, in particular for recently arrived groups. Given the epidemiological situation and the known increased risk for progression to active TB, individuals identified with LTBI, including those in this investigation, should be targeted for CPT based on a risk assessment. But access to treatment, e.g. CPT, has a number of obstacles. Language and cultural barriers impede communication about the benefits of CPT as well as the description of early signs and symptoms for active disease. Asylum seekers have an unclear residence permit status and might be transferred from

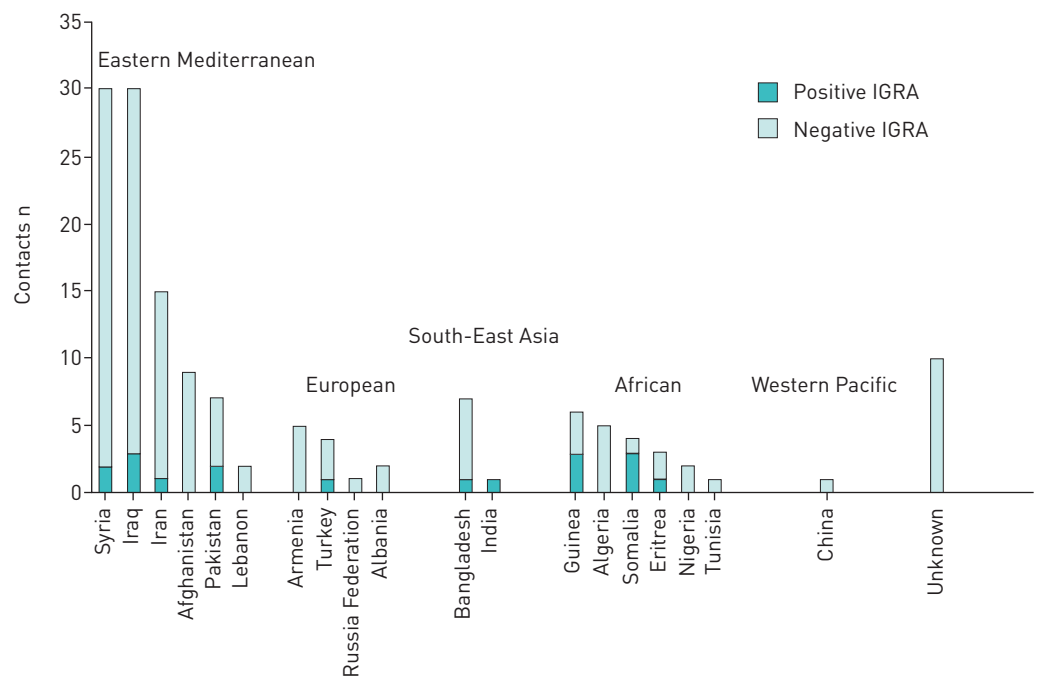


FIGURE 1 Distribution of country of origin and number of asylum seekers with a positive or negative interferon- $\gamma$  release assays (IGRA) by World Health Organization region.

one accommodation to another at short notice. Access to the health system and follow-up for adverse drug effects particular to CPT for LTBI is difficult in this situation. Results for the positive yield of the mandatory screening for active TB on arrival of asylum seekers are difficult to obtain because the screening is performed according to regulations of the different federal states [13]. The situation for LTBI is even more complex, because there is no generalised LTBI screening of asylum seekers and the indication to test asylum seekers differs considerably in the different federal states. Furthermore, CPT is usually not provided by the public health system or municipal authorities, it generally requires prescription from statutory insurance physicians. Hence, asylum seekers represent a group of potential new index TB patients and a missed opportunity for prevention and perhaps even early case detection.

Given the high number of immigrants in recent years in Germany, an increase in active TB cases within the next few years is a reasonable expectation [13]. This situation counteracts the World Health Organization strategy for low-incidence countries to achieve TB incidences of below one case per 100 000 persons [12]. Based on our limited data, we do not recommend general screening, but would like to stimulate a discussion about screening strategies for LTBI [14]. A better system of registration, documentation and follow-up of LTBI cases and CPT between public health services and the statutory health systems appears highly recommendable for Germany. We recognise a need to optimise the strategies for LTBI screening, preventive therapy and early TB case detection among the vulnerable group of asylum seekers to low-incidence countries.

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