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TB among Greenlanders in Denmark

The 2009 TB increase among Greenlanders in Denmark, EPI-NEWS 50/10, continued in 2010 as a total of 65 Greenlanders were notified with TB, among whom 18 (28%) were recurrences. Greenlanders in Denmark were thus the largest group of TB cases among persons of non-Danish origin (28%) with an incidence of approx. 450/100,000. For comparison, TB incidence in Greenland averaged 132/100,000 in the 2006-2010 period. The majority of cases occurred in clusters (chains of transmission), most of which were entirely Greenlandic, but there were several cases of mixed Danish-Greenlandic clusters, including the so-called "cluster 2". In 16 (25%) cases, homelessness and/or abuse were noted. A total of 35 were reported from the city of Copenhagen, eight from South Jutland and four from East Jutland and Funen, respectively, while 0-2 cases were reported from the remaining parts of Denmark. In five cases, information about part of country was missing.

Microbiological diagnosis

In 2010, the TB diagnosis was confirmed by culture with subsequent species determination in 284 of the 359 (79%) cases, including 98 of the 130 cases in Danes and 186 of the 229 (81%) cases in immigrants. Two *M. bovis* cases were detected, both in immigrants, the remaining cases (282) had TB caused by classic *Mycobacterium tuberculosis*. Among the notified cases not confirmed by culture (75), three Danes and four immigrants had a positive PCR and/or microscopy. According to the EU disease definition, EPI-NEWS 51/09, a total of 285 (79%) were confirmed cases, 14 (2%) probable cases and 68 (19%) were possible cases.

Among a total of 298 notified cases of pulmonary TB (\pm other localization), 242 (81%) cases were verified by culture, including 91 of the 115 (79%) Danish cases and 151 of the 183 (83%) immigrant cases. Microscopy of expectorates from 91 Danes with culture-confirmed pulmonary TB (\pm other localization) yielded 52 (57%) positives who were thus regarded as infectious. This proportion was 55% for immigrants (83 of 151). Among the 242 cases of culture-confirmed pulmonary TB, 179 (74%) were tested by PCR, of whom 158 (88%) were positive.

Resistance

Drug resistance results were available for all 284 culture-confirmed cases.

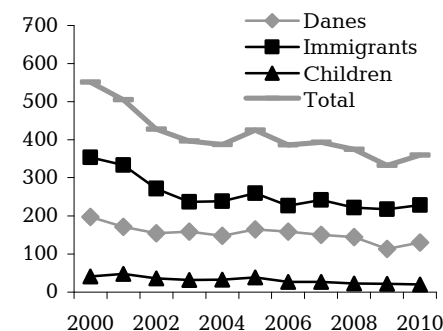
A total of 251 of these cases were notified with TB for the first time, including 93 Danes and 158 immigrants. Among those notified for the first time, isoniazid mono-resistance was detected in 18 (7%) cases, including nine Danes and nine immigrants. Furthermore, a case of polyresistance (isoniazid, streptomycin, amikacin and capreomycin) was detected in a Yugoslav-born woman.

In 33 patients with positive culture, information on previous TB was provided. This group comprised ten Danes and 23 immigrants. In two of these cases - a Dane and an immigrant who had both previously received TB treatment - isoniazid mono-resistance was detected. No cases of polyresistance were found among previously treated patients. In 2010, two cases of multidrug resistant (MDR) TB were detected. MDR is defined as resistance to the two main antibiotics, isoniazid and rifampicin, and to any other antibiotics. One of the MDR cases occurred in a middle-aged Danish male who had infectious pulmonary TB (+ extra-pulmonary TB). The patient was living in an area characterized by alternative accommodation types and close contact to the remaining residents, but to date no evidence of additional cases with the same bacterial strain have been found. The patient died. The second MDR case occurred in a young Indonesian-born male who was living with seven other males. He had non-infectious glandular TB, and to date no evidence of additional cases with the same bacterial strain have been found. In none of the two MDR cases were there information about previous TB.

Comments to parts I and II

Compared with 2009, the number of notified TB cases in 2010 increased by 9%, from 329 to 359, [Figure 1](#). Such increase was comprised by a 14% increase among Danes (114 to 130) and a 7% increase among immigrants (215 to 229). There is a need for increased focus on TB control in Denmark. In countries with an effective national TB programme, an annual decrease in the number of TB cases of 5-7% is expected, EPI-NEWS 50/10. The elderly population, who became infected when TB was widespread in Denmark, decreases steadily. Consequently, fewer TB cases caused by reactivation of "old" latent infection are seen.

Figure 1. Notified tuberculosis cases by Danes, immigrants and children < 15 years, 2000-2010



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Excess incidence of TB is still observed, particularly among middle-aged Danish males belonging to the major cluster called "cluster 2" (MIRU 1112-15). This group of TB patients has an excess incidence of social problems and addiction issues. Simultaneously, TB among Greenlanders in Denmark continues to follow an increasing trend. There is a need for increased efforts, particularly towards the above-mentioned patient groups. Late diagnosis means that many TB patients infect others before initiating treatment. The fact that the chain of infection thus often remains unbroken contributes to the continued occurrence of TB in Denmark.

In accordance with the guidelines of the Danish TB programme, infection tracing is mandatory for all newly diagnosed TB cases, and contact tracing shall always be performed in connection with infectious pulmonary TB.

Special efforts are needed in TB risk environments, e.g. the Copenhagen area X-ray bus initiative, and a novel Copenhagen measure to train so-called "TB ambassadors" among persons who are in contact with the risk environments.

Health personnel at Danish hospitals continue to become infected with TB; efforts should continuously be made to prevent such infection via relevant hygienic measures.

(T. Lillebæk, National Department of TB and mycobacteria, P.H. Andersen, Dept. of Epidemiology)

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