

Background

M. bovis is capable of infecting a wide range of mammals, including humans. Zoonotic transmission occurs through close contact with infected cattle or consumption of contaminated animal products. Tuberculosis due to *M. bovis* is a rare infection in humans in the EU. During 2012, 125 confirmed human cases were reported by 9 European countries. Most cases were reported in Germany, the United Kingdom and Spain. *M. bovis* was also detected in EU in over 10 animal species other than cattle, including wildlife. The aim of this study is to describe the microbiologic and epidemiological features of human *M. bovis* infection in Navarra (Spain) between 2000 and 2014.

Methods

Retrospective study of *M. bovis* isolated in a tertiary care hospital, that serves a population of 640,000 inhabitants in Navarra (Spain) between 2000 and 2014. The native and foreign terms are used to describe patients born in Spain or abroad. The average proportion of immigrants during the study period was 9% (1.7% in 2000, 10.2% in 2014).

Results

16 strains of *M. bovis* were recovered, this represents 1.6% of all isolates of *M. tuberculosis* complex. The average incidence in natives was 0.13 per 100,000/h and 0.64 in foreigners. The mean age was 52,7 years (6-89), 20,6 years in foreigners and 67,3 in natives.

Patients with isolation of <i>Mycobacterium bovis</i>											
Nº strain	Isolation year	Age	Sex	Patient from	Sample	Smear	Susceptibility to antituberculous drugs				
							INH ²	RIF ³	ETB ⁴	STR ⁵	PZA ⁶
1	2003	77	Male	Spain	Sputum	Positive	R	R	S	S	R
2	2004	84	Female	Spain	Lung	Negative	S	S	S	S	R
3	2006	45	Male	Spain	Colon biopsy	Negative	S	S	S	S	R
4	2006	6	Male	Morocco	Lymphadenopathy	ND ¹	R	S	S	S	R
5	2008	57	Female	Spain	Lymphadenopathy	ND	S	S	S	S	R
6	2009	83	Male	Spain	Sputum	Negative	R	S	S	S	R
7	2010	24	Female	Morocco	Lymphadenopathy	ND	S	S	S	S	R
8	2010	49	Male	Spain	Liver biopsy	Negative	S	S	S	S	R
9	2011	89	Female	Spain	Bronchial aspirate	Positive	S	S	S	S	R
10	2012	87	Male	Spain	Bronchoalveolar lavage	Negative	S	S	S	S	R
11	2012	16	Female	Morocco	Lymphadenopathy	ND	S	S	S	S	R
12	2012	73	Male	Spain	Bone	Negative	S	S	S	S	R
13	2012	88	Male	Spain	Pleural fluid	Negative	S	S	S	S	R
14	2013	29	Male	Nigeria	Urine	Negative	S	S	S	S	R
15	2014	28	Female	Morocco	Sputum	Positive	S	S	S	S	R
16	2014	8	Female	Spain	Ascites	Negative	ND	ND	ND	ND	ND

¹Not done; ²Isoniazid; ³Rifampicin; ⁴Ethambutol; ⁵Streptomycine; ⁶Pyrazinamide.

Conclusions

- Although a larger number of cases are native, the incidence of the disease in patients born abroad or born to immigrants is five times higher. Moreover all pediatric cases occurred in foreign population.
- The incidence in our study during 2010-2014 ranged 0,15-0,62/100.000h and is higher than that reported in Europe or Spain, both were 0,03/100.000h in 2012.
- The average age of patients is lower in the foreign population, likely due to a recent zoonotic transmission, while native are older and the disease may be related to reactivation.
- Higher proportion of isolates in extrapulmonary samples as previously described by the microaerophilic nature of *M. bovis*.