

Primary resistance to anti-tuberculosis drugs in Valladolid (Spain) over 30 years



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OBJECTIVE

The global control of tuberculosis remains a challenge from the standpoint of diagnosis, detection of drug resistance and treatment. Surveillance in anti-tuberculosis drug resistance to M tuberculosis (Mt) isolates in newly treated patients from a tertiary general hospital serving 240.000 inhabitants.

METHODS

Prospective analysis included all drug susceptibility test (DST) performed on 1097 initial isolates of Mt between 1981 and December 2010, from newly treated human immunodeficiency virus (HIV) negative patients, devised in five periods. DST was conducted by a National Reference Laboratory (Dra. Marisol Jiménez, Instituto de Salud Carlos III, Madrid, Spain) using the standardised proportion method, according to the guidelines of the external quality assurance programme.

Resistance to streptomycin (SM), isoniazid (INH), rifampicin (RMP), ethambutol (EMB) or pyrazinamide (PYR) was evaluated. Primary drug resistance (PDR) was defined as resistance to strains of Mt in patients without a history or other evidence of previous treatment. Mono-resistance was defined as resistance to only one drug. Multi-drug resistance (MDR) was defined as resistance to at least isoniazid and rifampicin.

RESULTS

Resistance to first-line drugs in Mycobacterium tuberculosis are showing in Table 1 and Figure 1.

	1981-1990 (N=301)	1991-1995 (N=338)	1996-2000 (N=185)	2001-2005 (N=170)	2006-2010 (N=103)
Primary drug resistance	6.3	4.7	3.24	1.76	6.8
Mono-resistance	5	3.8	2.7	1.2	5.8
> 2 drugs resistance	1.3	0.9	0.54	0.5	1
Multi-drug resistance	0	0	0	0	0
SM- resistance	3	2.3	1	1.2	1.9
INH- resistance	4.3	1.8	2.1	1.2	5.8
RMP- resistance	0.3	0	0	0	0
EMB- resistance	0	1.5	0.5	0	0
PYR- resistance					4

Table 1. Resistance to first-line drugs in Mycobacterium tuberculosis (%)

SM: Streptomycin; INH: Isoniazid; RMP: Rifampicin; EMB: Ethambuto; PYR: Pyrazinamide.

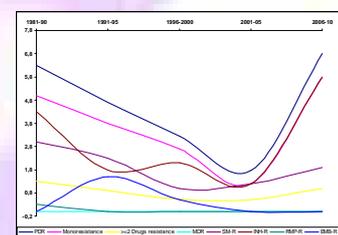


Figure 1. Evolution of Resistance 1981 – 2010

Conclusions

Periodic information about susceptibility patterns of Mt isolates against antituberculosis drugs is an important aspect of tuberculosis control. In the last five years resistance to first line anti TB drugs shows an ascending trend, comparing to former results of ours previous studies, being INH the less active drug. It is necessary study the epidemiological impact of immigrant people in this new field.