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Tuberculosis in Barcelona, an unsolved problem



Tuberculosis is an infectious disease that affects each year to 8.8 million people and produces about 1.4 million deaths worldwide, mostly in poor countries. The problem of its frequent association with HIV, has been added increasing antibiotic resistance mainly due to poor treatment compliance. Furthermore, it is unknown how many patients become ill (have a recurrence) when cured and what is their probability of dying in the long term. Therefore, the aim of this thesis is to determine the incidence (new cases) and the factors associated with Tuberculosis recurrence and death in Barcelona patients. This thesis highlights the prevention plans high efficiency in Barcelona and also highlights the need to continue the fight against tuberculosis in the current crisis, as the increase in poverty can lead to increased disease.

This thesis has followed up three cohorts (groups of patients) with Tuberculosis living in Barcelona and notified on the city Tuberculosis Programme (PPCTB). Patients who had completed treatment correctly according to European recommendations were selected. The

three cohorts covered the period 1987-2006 and were followed until the end of 2009. All data came from epidemiological surveys of PPCTB of BCN, performed on all cases detected by public health nurses. The incidence of recurrence and mortality was calculated and different analyses were conducted to learn about survival factors.

The incidence of recurrent TB in the period 1995-2005 was low (530 cases per 100,000 population) and the period 2003-2009 was still lower (341 cases per 100,000 inhabitants).

Patients who had a higher risk of recurrence were men, immigrants, drug addicts, Ciutat Vella (inner-city) residents, HIV positive and those who had a previous Tuberculosis. HIV patients on antiretroviral therapy, had a lower risk of recurrence. In addition, patients with TB, despite having completed treatment had a higher risk of recurrence compared with the general population of having a first episode.

Half of the recurrences were due to exogenous reinfection of a different strain of *Mycobacterium tuberculosis*, that causes the disease, and the other half were due to endogenous reactivation. The mortality rate was higher than that of the general population (3,400 cases compared to 1,147 cases per 100,000 population). Alcoholism, having more than 41 years and HIV-infected were associated with an increased risk of death. Having had a recurrence was not associated with an increased risk of mortality.

The low incidence of recurrence in Tuberculosis is due to the PPCTB that has adapted to the changing needs of the population. The model of PPCTB should be extended to other cosmopolitan cities to improve their control over the world, especially among the most vulnerable populations as defined.

This thesis recommends that doctors should always suspected Tuberculosis: observe how the patient takes medication daily, use of antiretrovirals in HIV-infected and the existence of health workers in PPCTB have been important advances in this direction. Malnutrition, overcrowding or stress migration would probably be the ultimate reason for which a recurrence occurs in Tuberculosis, not the fact of being an immigrant, live in the inner city.

The mortality rate among cured Tuberculosis patients was higher than the general population. Probably the TB could be a surrogate marker that identifies weaker population groups.

Finally, in the current economic and financial crisis in which we are immersed, and having commented on the close relationship between Tuberculosis and poverty, we would recommend staying more alert than ever to a possible resurgence of the disease and its recurrence in the future ensuring at all times a minimum financial and human resources to different PPCTB.

Juan Pablo Millet
juampablomillet@gmail.com

References

"Study of recurrence and survival in patients with tuberculosis who completed treatment in the city of Barcelona", doctoral thesis read by Juan Pablo Millet in the Department of Paediatrics,

Obstetrics, Gynaecology and Preventive Medicine of the Universitat Autònoma de Barcelona.

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