Introduction

While on the one hand the continuous migration flows to industrialized countries have led the general public to identify and dismiss immigrants as the root of all evil, on the other their impact compels us to try to better understand the real social conditions of migrant populations and their health status. A study of tuberculosis in particular must bear this in mind, since historically the main risk factors of this disease are social determinants (inadequate housing conditions, unemployment, malnutrition, poor hygiene).1

To January 1, 2010 there were 4,235,059 foreign nationals living in Italy, about 7.0% of total residents.2 It is a large figure for a country like Italy where immigration is a relatively new phenomenon.

Great strides have been made in recent years in the control of tuberculosis, but much still remains to be done, especially in Africa. The latest report of the World Health Organization (WHO) on global tuberculosis control in fact shows a complex framework characterized by contradictory reports of both optimism and concern.

Tuberculosis is still a very important disease globally, with 8.8 million new cases (5.7 million of which were officially reported cases) and 1.1 million deaths in HIV-negative and 350,000 in HIV-infected patients.3

In Italy the incidence of TB in 2008 was 3.8/100,000 cases for native Italians, and 50-60/100,000 cases for non-native subjects. Therefore, the number of TB cases in non-native subjects were more than doubled between 1998-2008, and reached 50% of the total cases.4

Although the incidence has decreased in recent years, the immigrant population still has a relative risk of TB 10-15 times higher than the native Italian population. Almost two-thirds of cases of TB in foreigners in 2008 occurred in northern Italy, young adults being the most affected.5 These data reflect the different characteristics of the population at risk at the local level, but may also indicate a different degree of sensi-
tivity to the problem on the part of the public services and health-care workers, who may under-report evidence or be selective towards specific segments of the population.

The aim of this study was to retrospectively evaluate, all cases of tuberculosis reported in our reference center for immigrants between 2005-10, by analyzing the day-hospital discharge cards.

Materials and methods

Since 2000 an outpatient and day-hospital center reserved for illegal immigrants has been operating at the University Hospital Policlinico “Paolo Giaccone” of Palermo. It can be readily accessed (no previous appointment reservation is necessary) and provides free basic medical care to the immigrant population. The medical and nursing staff are employees of the Regional Public Health Service, which is also responsible for the management and organization of the center.

Our survey is based on all the day-hospital discharge cards containing a reference to tuberculosis of the immigrants assisted in the period 2005-2010. In particular, we selected and analyzed:

- socio-demographic data, such as age, sex and country of origin
- clinical data, such as site of the disease (pulmonary or extra-pulmonary) and its various clinical expressions
- social factors such as: residence permit, employment, housing conditions, level of education, duration of migration, the time lapse between arrival in Italy and diagnosis of TB and family reunification.

Since the study included data collected anonymously from the medical records, informed consent was not requested from the patient.

Statistical Analysis

Since this study was mainly descriptive epidemiology, no inferential statistical analysis was performed. Categorical variables are expressed as absolute values or as a percentage.

Results

Socio-demographic data

Between 2005 and 2010 we found 64 cases (46 M; 18 F) of tuberculosis out of 1190 admissions, age ranging between 13 and 73.

Figure 1 shows the number of cases of TB in the study period, divided by sex. Of note: in 2009 there was a peak total of 15 cases, with a higher proportion of women (9 cases) the highest compared to other years.

Figure 2 shows the number of patients distributed according to age in ten-year intervals. It can be seen that the highest incidence was between 20 and 40 years. The trend decreased significantly in the elderly, with no cases in the sixties interval and only one case in the seventies. Furthermore, there were only 2 cases between 10 and 19 years.

Africa was the continent most represented (n = 42; 65%), followed by Asia (n = 17; 27%) and then Europe (n = 5; 8%).

Figure 3 shows the various states of origin: for Africa, eight came from Ghana, representing the highest proportion (N. B.: Ghana is also the state of origin of the majority of Africans who normally attend our service), seven from Ethiopia and six from Nigeria and Morocco.
The next continent in the list is Asia, with 17 cases. Bangladesh (8 cases) was the state most represented, followed by Sri Lanka (6 cases), Mauritius (2) and Syria (1).

Finally, 5 cases were from the European continent, 4 of them coming from Romania (N.B. Romania is the most frequent state of origin of European immigrants in Italy), while the remaining case was from the former Yugoslavia.

Clinical data

Tables 1 and 2 show the distribution of cases of tuberculosis divided into pulmonary and extra-pulmonary sites, respectively. Pulmonary tuberculosis was slightly more prevalent (51.6%), with 33 cases. The growing presence of post-primary forms must be emphasized: there were 30 cases, of which 17 were “infiltrative”, 5 “nodular”, 3 “after-effects of pulmonary TB”, 2 “bronchial” and only 3 of “cavitary tuberculosis”.

Extra-pulmonary tuberculosis accounted for 48.4% of our sample, with 31 cases (3 renal involvement, 4 bone, 5 peritoneal, 6 pleural of which two cases associated with peritoneal and pericardial involvement).

The remaining 13 forms were lymph node forms.

In women were predominant the pulmonary forms, while in men were most represented the extra-pulmonary ones.

Significantly associated pathologies were bronchiectasis exacerbations (2 cases) and HIV infection (2 cases).

Social determinants

Out of the total TB cases only 7 subjects had a residence permit, 4 of whom were awaiting recognition of refugee status (1 from Sri Lanka, one from Somalia and two from Ethiopia). 54 (84.4%) were irregular and/or illegal immigrants. The latter enjoyed the benefits of law 40/98, which protects temporarily present non-EU subjects and “unidentified” Europeans.

The sample consisted mostly of people who do not go out to work on a continuous basis. Fifty-three (82.8%) were unemployed and some of them had been doing an activity in their country of origin (mechanic, driver, student): job loss was due to their migration to Italy. Among the men there were the most varied professions: assistant cook (1), bricklayer (1), bartender (1), mechanic (2), office employee (1), while among the women predominant activities were caregiver (2) and hairdresser (2). One had come to study and one was a peddler (1).

Examining the housing situation for both men and women outlined the tendency to live in community or voluntary structures. 34.4% lived in these locations, some of them together with their families or spouses (7 cases among men, 6 among women). Most of subjects, however, had arrived in Italy.
alone and were waiting for a better socio-economic stability to permit a family reunification.

Discussion

Tuberculosis still kills 4,700 people in the world each day. Most of these cases are concentrated in South-East Asia, Africa and the Western Pacific. As regards Europe, in 2010, 79,665 cases of tuberculosis were reported in twenty-seven countries. In Iceland and Norway there were 3,635 cases, which was 4.5% less than in 2009.

In the present study there were no significant socio-demographic data indicating an increase in the incidence of tuberculosis in the time range considered (2007-2012). The number of cases in fact is about 10 per year, with a minimum of 9 cases in 2008 and 2010 and a maximum of 15 cases in 2009. These differences may be explained by an increase in the number of asylum seekers arriving via the outlying island of Lampedusa (in poor psychological and physical conditions) and by legislative uncertainties regarding assistance for citizens of some Eastern European countries, which became EU members in 2008, and, therefore, since then, are no longer a burden for public health services. Following the introduction of the ENI (Unidentified european) code, Romanian, Bulgarian and Polish men and women have finally started to seek assistance at the same clinics dedicated to the free care of irregular migrants. The presence of the two cases of Mauritian women is related to the severe economic crisis affecting their country at the time of their arrival.

The data confirmed a higher incidence in males, in the age group between 20 and 40 years, which clearly matches the trend of general migration, where there is a known prevalence of males between 20 and 45 years. They have a better migration plan related to a better life expectations and better socio-economic factors.

The data regarding the time of immigration are difficult to interpret. Most of the subjects came to our center between the first and fifth years after arrival in Italy. This appears to be in agreement with the findings that estimate the onset of the disease in the first 2-4 years following the date of immigration. On the other hand, there were 7 cases in our sample in whom onset was reported at 6-10 years after the date of immigration and 4 cases even after 11-20 years. For these cases the hypothesis is that they are likely “acquired forms”.

The clinical data of the sample are in agreement with the literature on the prevalence of tuberculosis among immigrants, as there were more extra-pulmonary forms than in the native-Italian population.

One notable observation was the almost total disappearance of the rare forms of extra-pulmonary TB (hip or spine etc.), while classical forms of pulmonary TB were prevalent. Of interest, however, was the lack of serious forms such as open tuberculosis and the almost absolute predominance of post-primary forms among the pulmonary manifestations.

One particular difficulty in this study was that our research data were often incomplete. This was related to difficulties in communication. In fact, careless policies followed by institutions frequently cut off funding to the facilities which promote the integration and care of immigrants. Nor can we underestimate the lack of a regional epidemiological observatory, which makes it difficult to co-ordinate and consult the existing data, and thus it is not possible to gain a complete view of the overall phenomenon of tuberculosis in particular. For this reason we are not able to provide any information about the therapeutic follow-up of the patients in our sample. This is on the one hand due to the characteristics and the variability of the sample (immigrants residing in our territory for only a short period), on the other it is also partly due to the problems described above.

As concerns the data on social conditions, the most significant ones are related to the difficulty of finding employment (most of our cases were looking for their first permanent job) and thus to the resulting economic instability, which permits only a poor quality of life. Immigration is certainly one of the realities in which “social” and “health” conditions are inextricably connected. In fact, environmental (in particular social standing type) and consequently behavioral factors clearly seem to prevail over genetic ones in determining the health of foreign immigrants. Social factors such as housing, nutrition, psycho-emotional support, access to health care and social services etc., unequivocally determine the living conditions of immigrants.

The inadequate housing situation definitely has a leading role especially in the case of tuberculosis, as already mentioned: dormitories, shelters and foster homes for the legal immigrants; sheds or makeshift shelters (under bridges, in subway stations, in wagons or in the waiting rooms of stations)
for the irregular and illegal ones. Living in depressed urban areas, in unhealthy apartments or rooms for rent or sublet, (there is a particularly serious and widespread economic speculation in this area), brings with it serious problems of overcrowding and sanitation which is inadequate or totally lacking, with obvious risks for the transmission of infectious contagious diseases.

Another important risk factor for tuberculosis is malnutrition. Often an immigrant comes from an area where poverty is predominant and thus there is a scarcity of food. We must also not forget the difficulties immigrants have to face of adapting to a culture with different food and culinary traditions and consequently the inadequacy of their habitual diet to the new environment (climate, required physical activity levels, etc.).

The lack of an adequate psycho-affective environment has also shown to be of great importance. This situation affects especially first-generation migrants before their reunification with immediate family members (still the case in some ethnic groups). Leaving behind loved ones (family, partners, friends) at a particularly delicate phase in their lives, in which they are likely to see optimistic expectations of improving their lives dashed, leads to a greater psychological vulnerability.

Consequently, the existence of organized immigrant communities, which can offer solidarity, is understandably of great significance. They can be a resource to draw on in difficult times, and can promptly understand the variety of problems posed by migration in its different forms.

Tuberculosis in the immigrant has been confirmed as the disease of “social determinants”(8,9,10). It is the disease that strikes most frequently during periods of psychological, physical and social fragility. Therefore, the call to implement "policies to contrast it" must not go unanswered. Fortunately, the tools to deal with it do exist and are explicitly expressed in the Italian Society of Migration Medicine (SIMM) guidelines for tuberculosis (2008).

References

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