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ПРОБЛЕМЫ ОБЩЕСТВЕННОГО ЗДОРОВЬЯ И ЗДРАВООХРАНЕНИЯ

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ТУБЕРКУЛЕЗ И МАРГИНАЛЬНЫЕ ГРУППЫ НАСЕЛЕНИЯ

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Туберкулез снова привлекает к себе внимание в западноевропейских странах в связи с проблемой роста иммиграции и связанных с ней факторов риска, таких как бедность, бездомность, наркомания, СПИД. В данной работе проанализирована степень распространенности туберкулезной инфекции у 214 субъектов маргинальных групп населения, для которых присущи вышеперечисленные факторы риска. Среди обследованных представителей выборки преобладают иммигранты из различных стран, цыгане, наркоманы, ВИЧ-инфицированные, алкоголики, заключенные, лица, проживающие с больными туберкулезом. Мы использовали модель регрессионного анализа, чтобы оценить степень влияния различных факторов риска и позитивной реакции Манту. Самые высокие показатели в сравнении с итальянской выборкой были обнаружены среди беднейших слоев иммигрантов (OR 4,34; 95% CI 1,93–9,77), иммигрантов-заключенных (OR 3,76; 95% CI 1,32–10,68), иммигрантов, проживающих с больными туберкулезом (OR 3,50; 95% CI 1,49–8,18). Были выявлены существенные различия между иммигрантами-маргиналами и социально организованными иммигрантами (цыганами, китайцами, имеющими постоянное место жительства) в преобладании положительной реакции Манту.

Ключевые слова: туберкулез, факторы риска, маргинальные группы населения, иммигранты, реакция Манту.

TB INFECTION AND MARGINAL GROUPS. A SURVEY IN THE FLORENTINE TERRITORY

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TB infection comes again into notice in Western Europe in connection with the problem of upgrowth of immigration and related risk factors as poverty, homelessness, drug addiction, AIDS. This research work analyses prevalence of TB infection among 214 subjects of marginal groups, in which reside above mentioned risk factors. Sample involves immigrants from various countries, Gipsies, drug addicts, HIV-affected, alcoholics, prisoners, people, living with TB-affected. We use a model of regression analysis to evaluate the degree of influence of various risk factors and positive Mantoux. Certain inequality is educed between immigrants constituting marginal groups and immigrants socially organized (Gypsies, Chinese, those, who have permanent residence) in prevalence of positive Mantoux.

Key words: tuberculosis, risk factors, marginal groups, immigrants, Mantoux.

Methods

Tuberculin screening with Mantoux intradermal reaction has been carried out on 2014 subjects with one or more risk conditions of social distress such as: extra European community (e-EC) immigrants, nomads, drug dependents, immunodeficients, alcohol dependants, prison inmates living in protected community or home known to have contact with people with the above conditions. The survey has been carried out in procted in: protected centers, 4 nomad camps in different district, three prisons, some living and working sites of the Chinese community.

The protocol used in all these places follows universally accepted international standards which foresee the performance of the test with intradermal inoculation of 5 IU of PPD, equivalent to 0.1 ml, on the anterior aspect of the forearm and the reading 48–72 hrs later. The test is declared positive at the appearance of an induration of at least 5mm diameter.

In order to increase and facilitate participation, we made use of health workers and cultural representatives of the original countries of the subjects involved. Privacy concerning personal and medical information has been applied to all concerned including illegal immigrants.

Information collected were: personal identification data, hygienic and health conditions of living and working sites including also family members and tuberculin-positive contacts, clinical data, specific data related to history of TB infection if any.

Subjects with an inflammation patch of $\geq$ 5mm diameter in age group below 15 years or with negative results in screening the preceding year and all subjects with $\geq$ 10mm patch have been sent to specialized services for X-ray diagnosis and for chemoprophylaxis if necessary. TB cases in active faze have been hospitalized and reported to the responsible public health services for epidemiological investigation and for implementation of surveillance measures. Contact persons have been invited to submit tuberculin screening and to further diagnostic procedures if necessary.

Collected data have been elaborated using statistic software STATA vs. 7.0.

An evaluation of the degree of association between the various risk conditions and mantoux positivity has been made. A model of univariated and multivariated logistic regression has been used which considers as dependent decotomic value the «skin positivity» (with zero value in the case of skin negativity and 1 in case of skin posititу) and as independent variable single or multiple risk with a number of cases upper to 5 and at least one case of skin positivity.

Results

2014 subjects (1425 male and 589 female) have been submitted to tuberculin screening. Distribution by sex, age group and region of origin are described in figure 1 and 2. The results of intradermal reaction tests showed tuberculin positivity in 723 subjects (35.9%), 547 males (38.4% prevalence) and 176 females (29.9% prevalence). None of the 29 subjects below 1 year of age had latent infection. Most of the subjects (44.8%) with skin positivity show a patch diameter between 5 and 9 mm.; almost 7% has an inflammation patch $\geq$ 25mm, which are found almost exclusively in females (46 out of 48). Figure 3 shows the distribution by age and diameter size of inflammation patch.

The prevalence of skin positivity is particularly high in Africans (64.6%) compared with 37.1% in Asians, 35.6% in Europeans excluding Italians, 15.5% and 42.6% in Central and South Americans. Among skin positive Africans the dimension of the skin patch is ≥ 25mm in 10.3%, compared with 7.2% in Asians and 4.9% in Europeans (excluding Italians, 2.2%).

The distribution of the subjects by sex and risk conditions is shown in figure 4 while table 1 shows the distribution by risk group (one or more risk factors) and Mantoux positivity prevalence. 474 subjects with only one factor (e-EC citizens) have a tuberculin positivity of 40.1%. If other conditions are added, the prevalence increases. In fact in 440 e-EC migrants and in guests of protected communities, the positivity reaches 66.1%; in the inmates it is 62.9% and in e-EC TB contacts it is 61.9%. These data are confirmed in the subsequent logistic regression analysis.

Radiological Investigations

Of the Mantoux positive 723 subjects sent to the responsible radio diagnostic units only 574 (79.4%) agreed to receive X-ray diagnosis. Negative subjects where 548, where as 24 where cases of probably previous TB infection. In 2 cases it has been possible to ascertain active contagious pulmonary infection, confirmed by sputum culture: a Chinese male child, the other an Albanian male child.

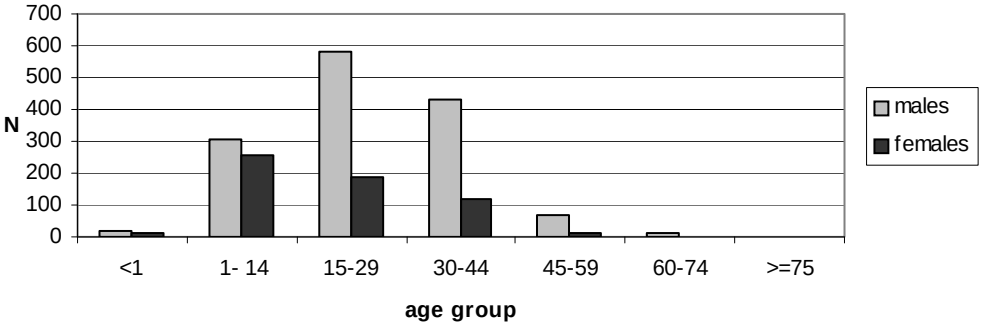

Fig. 1. Distribution of the population by sex and age group.

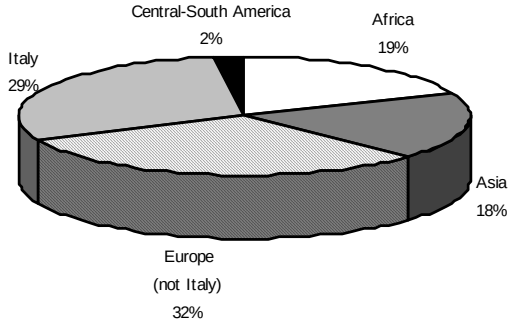

Fig. 2. Distribution of the population by region of origin.

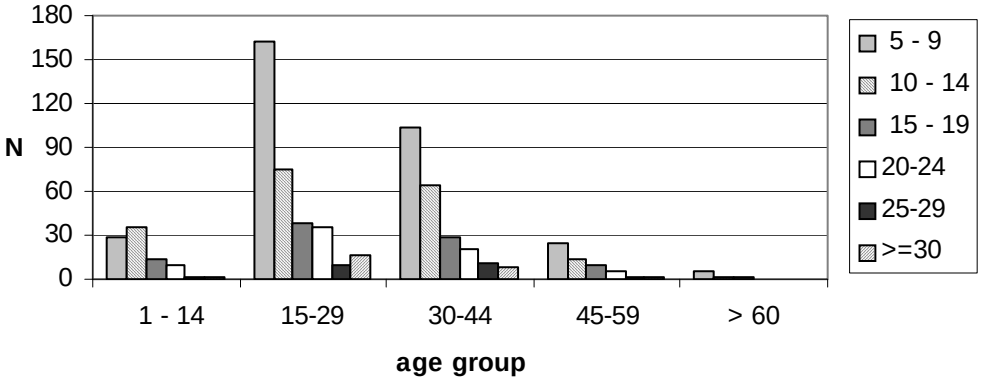

Fig. 3. Distribution by age and diameter size (mm) of inflammation patch

in positive mantoux subjects (no TB positive case in the first year of life).

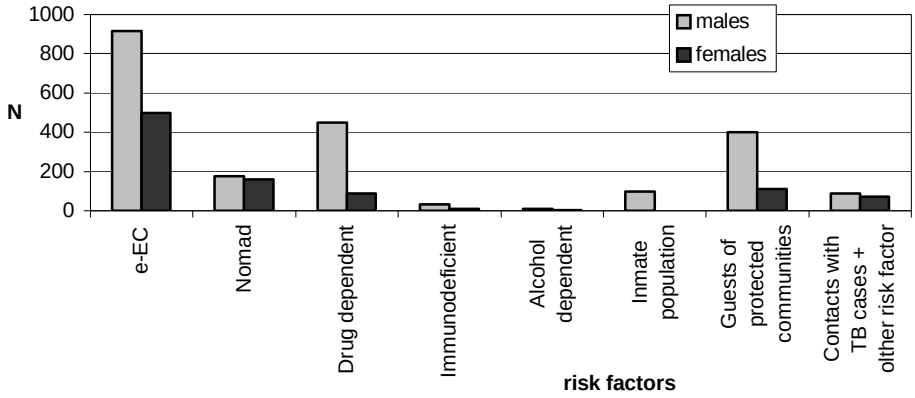

Fig. 4. Distribution by risk and sex of the population (the total is higher than the actual total of subjects observed, because the same subjects may belong to several risk groups).

Table 1

Number of people under study by risk group and Mantoux positivity prevalence

Risk factors	Total	Mantoux positivity	
		N	%
E-EC migrants*	474	190	40,1
E-EC migrants + Nomad	332	44	13,3
E-EC migrants + Protected communities	440	291	66,1
E-EC migrants + Contact	157	96	61,1
E-EC migrants + Alcohol dependence	5	4	80
E-EC migrants + Drug dependence	29	11	37,9
E-EC migrants + Prison	35	22	62,9
Nomad + Alcohol dependence	1	1	100
Nomad + Contact	14	9	64,3
Nomad + Protected communities	2	1	50
Protected communities *	50	25	50
Protected communities + Drug dependence	27	6	22,2
Protected communities + Contact	30	14	46,7
Protected communities + Immunodeficiency	5	0	0
Prison*	62	10	16,1
Prison + Alcohol dependence	1	0	0
Prison + Drug dependence	57	20	35,1
Prison + Immunodeficiency	3	1	33,3
Drug dependence *	422	50	11,8
Drug dependence + Alcohol dependence	1	0	0
Drug dependence + Immunodeficiency	39	3	7,7
Drug dependence + Contact	3	2	66,7
Alcohol dependence *	7	0	0
Alcohol dependence + Contact	5	4	80
Contact*	1	0	0

— with only one risk factor

Analysis of Logistic Regression

Table 2 gives the results of univariate logistic regression analysis, where as table 3 gives those related to the multivariate analysis.

From the univariate analysis it appears that the majority of risk factors have a significant association with Mantoux positivity.

If to the condition of e-EC (which presents an «ODDS RATIO» at the limit of significance p = 1.24) other conditions (community, contact, prison) are added, the probability of positive Mantoux increases. A high risk

may be noted also in the case of nomad + contact. The condition of «community guest» presents an «ODDS RATIO» greater than one, although at the limit of significance.

On the other hand «e-EC» condition + nomad appears to be significantly «protective» in relation to Mantoux positivity (OR=0.23) just like «community», «drug dependence», «drug dependence + immunodeficiency» with respective values of 0.33, 0.19 and 0.14. Results obtained with the univariate regression are supported partly by the multivariate logistic analysis. Risk conditions «e-EC + community», «e-EC + contact», «e-EC + prison» show significantly high «ODDS RATIO» values, where as «protective conditions» (inversely correlated to skin positivity) are «e-EC + nomad», «drug dependence», «drug dependence + immunodeficiency».

Table 2

Univariate Logistic Regression

Risk factors	odds ratio	z	P>|z|	[95% Conf. Interval]	
E-EC migrants	1,24	2,01	0,044	1,00	1,52
E-EC migrants + nomad	0,23	-8,79	0,000	0,16	0,32
E-EC migrants + protected communities	4,86	13,91	0,000	3,89	6,07
E-EC migrants + contact	3,02	6,5	0,000	2,16	4,22
E-EC migrants + drug dependence	1,08	0,2	0,841	0,51	2,30
E-EC migrants + prison	3,04	3,16	0,002	1,52	6,08
Nomad + protected communities	3,20	2,08	0,037	1,07	9,59
Protected communities	1,79	2,04	0,042	1,02	3,14
Protected communities + drug dependence	0,50	-1,49	0,137	0,20	1,24
Protected communities + contact	0,44	-1,8	0,071	0,18	1,07
Prison	0,33	-3,17	0,002	0,17	0,65
Prison + drug dependence	0,95	-0,17	0,866	0,55	1,65
Drug dependence	0,19	-10,63	0,000	0,14	0,25
Drug dependence + immunodeficiency	0,14	-3,22	0,001	0,04	0,47
Alcohol dependence + contact	7,09	1,75	0,080	0,79	63,60

Table 3

Multivariate Logistic Analysis

Number of observations = 2202
LR chi2 (11) = 481,51
Prob > chi2 = 0,0000
Pseudo R2 = 0,1671
Log likelihood = -1199,9466

Risk factors	odds ratio	Z	P>|z|	[95% Conf. Interval]	
E-EC migrants	1,49	0,96	0,336	0,66	3,33
E-EC migrants + nomad	0,34	-2,50	0,013	0,14	0,79
E-EC migrants + protected communities	4,34	3,55	0,000	1,93	9,77
E-EC migrants + contact	3,50	2,89	0,004	1,49	8,18
E-EC migrants + drug dependence	1,36	0,55	0,580	0,46	4,03
E-EC migrants + prison	3,76	2,49	0,013	1,32	10,68
Nomad + contact	4,00	2,02	0,440	1,04	15,38
Protected communities	2,22	1,63	0,104	0,85	5,81
Protected communities + drug dependence	0,63	-0,74	0,460	0,19	2,11
Protected communities + contact	0,55	-0,97	0,330	0,17	1,82
Prison	0,43	-1,61	0,108	0,15	1,21
Prison + drug dependence	1,20	0,38	0,710	0,46	3,13
Drug dependence	0,30	-2,82	0,005	0,13	0,69
Drug dependence + immunodeficiency	0,18	-2,33	0,020	0,45	0,76
Alcohol dependence + contact	8,89	1,84	0,066	0,87	91,20

Discussion

Our study confirm that a TB highly endemic area of origin constitutes a risk factor (Raviglione, 1995; Watkins, 2002). Growing migration implies movement of people from high to low endemicity. Furthermore a series of unfavorable factors present in certain high risk groups in economically developed societies (poverty, lack of stable home, drug dependence, HIV infection) has made it mandatory for occidental countries to focus attention on a disease which seemed to have been forgotten. Other conditions, such as staying in prison or in protected homes, being in contact with TB cases, cause a risk increase (De Riemer, 1998; Grange, 2001). Our data indicate that the highest tuberculin indices are found exactly among the «most alienated of the alienated». Although the number of subjects examined by risk factors are different nevertheless there is a sharp difference between those socially organized (i.e. nomads, Chinese) and those without social reference, who seek occasional and temporary hospitality in available structures.

The population groups examined, generally speaking show higher rates than the Italian population. Stability is a «protected» factor in relation to M. tuberculosis (Koch's bacillus) infection. In fact the overall analysis shows that nomads of various age groups examined in the study present positive values (13.5%) not too different from those of the adult population.

As described in literature, TB recognizes poverty and «emargination» among its principle risk factors. Poverty is a powerful factor capable of canceling ethnic and racial differences. Tuberculosis, a disease of the past and a disease of the present, will not be a disease of the future only if health commitment will be combined with a deep political and social commitment.

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ИССЛЕДОВАНИЕ ЗДОРОВОГО ОБРАЗА ЖИЗНИ ДЕТЕЙ И ПОДРОСТКОВ БРЕСТСКОЙ ОБЛАСТИ

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Статья посвящена исследованию оценки детьми и подростками своего здоровья; степени их информированности по проблеме формирования здорового образа жизни, источников получения информации; выявлению основных потребностей, касающихся информации о