Epidemiologic features of syphilis in an obstetric-gynecologic female population in Trieste, from 1994 to 1998

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ABSTRACT

Introduction. Syphilis is a common sexually transmitted disease and is actually present all over the world. Some epidemiologic studies reported in the past an increase of syphilis incidence in females, especially in USA. In Italy after the period a decreasing (1945-1956) the actual trend is increasing. In the population of Trieste new cases started to appear after 1957. Authors performed a retrospective epidemiologic study concerning the incidence of recent syphilis in female population in Trieste.

Materials and methods. We evaluated 17,944 women investigated in our Hospital from 1994 to 1998 by the specific treponemal tests, because latent syphilis is asymptomatic and is usually detectable only by a positive serologic test. These are TPHA (*Treponema pallidum* hemagglutionation assay) and the fluorescent treponemal antibody absorption (FTA-ABS) test for confirmation of positivity. Both tests were performed in all women admitted to our Hospital either pregnant or with gynecologic problems (15,368), as well as in females as outpatients (2,306).

Results. Total number of TPHA positive tests was 127: 18 (10 hospitalized) in 1994; 21 (16 hospitalized) in 1995; 31 (20 hospitalized) in 1996; 18 (12 hospitalized) in 1997; 39 (27 hospitalized) in 1998. Patients with obstetric problems resulted positive in 2 cases in 1994, 3 in 1995, 5 in 1996, 1 in 1997, 7 in 1998. An infection was assessed in 15 newborns: only in one case cerebral problems were noted. These data, collected in Trieste, during the 5-year period, revealed the incidence of *Treponema pallidum* infection of 5 cases/year per 1000 women.

Discussion and conclusions. Trieste has a negative population trend, but our investigation shows a remarkable increase of positive cases. Zar found a discontinuous trend in our town (Graph 1). The high incidence of old positive cases of syphilis could be due to unrecognized infections or an inadequate therapy. According to the study of Zar, we suppose that the recent immigration of young people from Eastern Europe, Africa and South America, as well as sexual behavior of the patients, caused the increase of venereal diseases.

KEY WORDS

syphilis, sexually transmitted diseases, venereal diseases

Table I. Syphilis cases notified to epidemiological healthy national bulletin in Italy, from 1993 to 1997

YEAR	MALE	FEMALE	TOTAL
93	334	157	491
94	357	184	541
95	318	157	475
96	293	137	430

Table II. Syphilis cases notified to epidemiological healthy national bulletin in Friuli Venezia Giulia region, from 1993 to 1996

	MALE	FEMALE	TOTAL
93	11	15	26
94	23	9	32
95	10	5	15
96	2	1	3

Introduction

Syphilis is one of the common sexually transmitted diseases and is present in all populations of the world. Some recent epidemiologic studies reported a steady increase of syphilis incidence in women.

The Atlanta Center for Disease Control and Prevention (CDC) in USA, assessed in 1991 the syphilis prevalence in the general population in USA as 3.9%, while in 1951, after the second world war it was 2.4% (1). In 1990, the National Institute of Health (NIH) reported 50,578 cases of syphilitic infections, with the incidence of 20.3 per 100,000 people (2). The CDC's report for 1995 mentioned more than 14,000 new cases of syphilis in USA population (3), and in 1998, 6,993 new cases with an incidence of 2.6 cases per 100,000 people (4). These data show that syphilis still remains an important STD in USA.

In Italy, the actual trend of syphilis is increasing despite severe controls by Italian National Institute of Health (5). During the period between 1955 and 1970, the number of Italian cases of syphilis, notified to public health authorities, were about 2,500 cases of syphilis every year (6). Reports on infectious diseases in Italy showed, that from 1945 to 1970 the incidence of syphilis was high, especially during the period following the second world war (1945-1956).

In Trieste and in the Friuli Venezia Giulia (FVG) region, Italian National Institute of Health reported 440 new syphilis cases in the year 1946. This number decreased to 70 cases in 1971 (Fig. 1) (7).

In Trieste and FVG region, this trend has stabilized and is even declining (Tables I and II).

The aim of our study was to write a retrospective epidemiologic study on the incidence of recent syphilis in the female population of Trieste. The investigation is interesting due to the geographic location on the town at the border of Eastern Europe. It was possible to include all females attending the Obstretic and Gynecologic Departments of the most important hospital in Trieste. The study was supported by the Italian National Institute of Health.

Materials and methods

We evaluated 17,944 women seen in our Hospital from 1994 to 1998. The specific serological treponemal tests were used: the treponema pallidum micro hemagglutination assay (MHA-TP) or TPHA (*Treponema pallidum* hemagglutination assay) and the fluorescent treponemal antibody absorption (FTA-ABS) test.

The TPHA has a specificity of 85.5% and a sensitivity of 98.6%. (8)

The test is performed as a standard laboratory procedure in all women admitted to our Hospital: pregnant women and patients with gynecologic problems (15.368) as well as in outpatients (2.306). Treponemal tests become positive early after the infection (9). Titers of the treponemal tests do not correlate with disease activity and cannot be used as criteria for treatment. Fig. 2.

All women suspected to display false-positive serologic test were excluded and were additionally investigated.

The initial screening for syphilis is usually performed with one of the nontreponemal antibody tests, e.g. the Venereal Disease Research Laboratory (VDRL) test, or the reactive plasma reagin (RPR) test. We didn't use these tests, because even being quite sensitive, they are not specific for syphilis and they cannot be relied on for diagnosis, especially when the disease is in its very early or late stage (8).

TPHA-positive women were divided into two groups. A group: TPHA-positive at the first visit and B group: TPHA-positive patients already tested at a previous investigation more than 8 years ago, with the same TPHA titer as at the previous investigation or a superior one.

Newborns from affected pregnant women, delivered in our Obstetric Department, were investigated serologically, ophthalmologically as well as by sonography immediately after their birth, at three months and at one year.

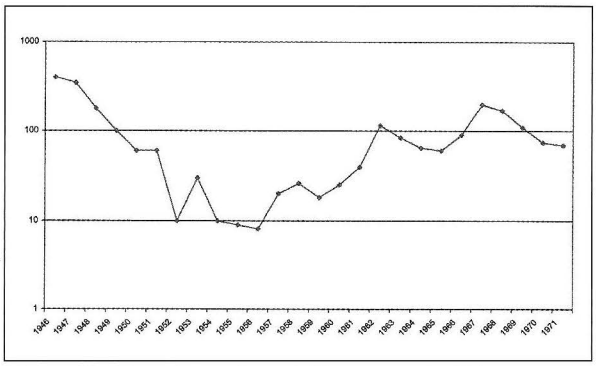


Figure 1. Number of syphilis cases in Trieste 1946-1971 (E. Zar).

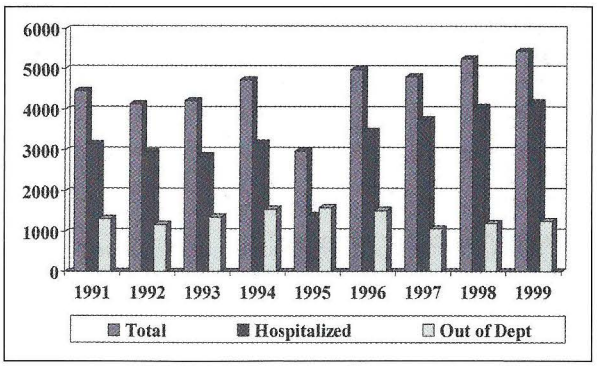


Figure 2. Total distribution of female patients tested for TPHA

Results

The total number of TPHA positive patients was 127: 18 were detected in 1994, 21 in 1995, 31 in 1996, 18 in 1997 and 39 in 1998. Out of these patients there were 10 hospitalized in 1994, 16 in 1995, 20 in 1996, 12 in 1997 and 27 in 1998. Fig. 3.

Positive obstetric patients were: 2 in 1994, 3 in 1995, 5 in 1996, 1 in 1997 and 7 in 1998 (Fig. 4).

An infection was assessed in 15 newborns: but only in one case cerebral involvement was detected.

The present epidemiologic study shows, that during the last 5 years syphilis was diagnosed in 5 out of 1000 patients per year.

Discussion

Our retrospective investigation shows a remarkable increase of new cases of syphilis in women (Fig. 2).

The last statistic report on Trieste population reveals that the total number of citizens is on a continuous decrease, with a negative population trend. From 1990 to 1998 the total number of residents dropped from 233.047 to 218.251 (116.570 women citizens), with a negative difference between newborns and deaths.

It is worth mentioning that the actual rate of immigration is 13.2 per 1000 people, the immigrants being mainly young people from Eastern Europe. They are considered the most important resource of working population. However, the risk of venereal infection is elevated because of the high incidence of syphilis in the countries outside the European Union.

A recent letter published in Lancet (10) about 110 foreign-born prostitutes (from Africa, Eastern Europe and ex-Soviet Union) screened in Verona, 9 were positive for serological markers of syphilis, at high titers.

The situation concerning foreign prostitutes in Italy is known to be similar.

The observed incidence of 5 cases/year per 1000 women compared with the discontinuous trend in the study of Zar (Fig. 4), could possibly be ascribed to altered sexual behavior, to illicit drug use, to exchange of drugs for sex, to the spread of HIV infection, and to immigration from Eastern Europe and Africa.

The actual syphilis spread among women in Trieste is remarkable, though less expressed than in the past. It results in a severe and continuous threat and is endan-

Figure 3. Incidence of new cases of TPHA positive in female population

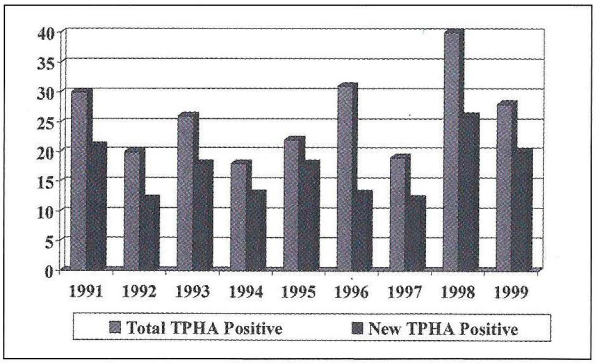
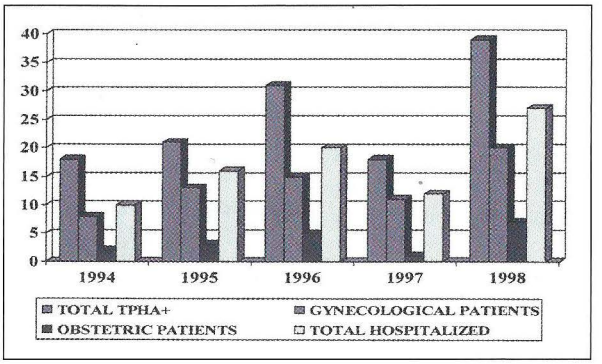


Figure 4. Distribution of syphilis in an obstetric-gynecologic population in Trieste, 1994-1998.



gering the male population at subsequent substantial social and economic costs.

A further reason for the spread of syphilitic infection is most probably the above mentioned demographic migrations from inside and outside the European Community. This highlights the importance to analyze the demographic and behavioral data and to develop preventive actions.

Due to the considerable syphilis incidence, a continued attention must be devoted on educating and screening persons in settings associated with high-risk behavior, and thus to introduce a high quality surveillance system.

Conclusions

During recent years the incidence of syphilis has amounted to 5 cases/year per 1000 female patients.

According to Zar's investigation, we suppose that the recent immigration of young people, from Eastern Europe, Africa and South America, as well as altered sexual behavior of patients, may be a major cause of the increase of venereal diseases. Similar data were reported recently, while the high incidence of old positive cases of syphilis could be caused by a new infection or by an inadequate therapy.

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