

Three years' experience of sexually transmitted diseases in Seville, Spain*

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SUMMARY At present there are no reliable statistics on the relative prevalences of sexually transmitted diseases (STDs) in Spain. In a report of the first three years' experience in an STD diagnostic centre between 1977 and 1979 a total of 879 patients (534 men and 345 women) were seen. They mainly consisted of university students and the mean age was 22 years in 1977 and 23 years in the following two years. All the patients were examined for syphilis and all women for gonorrhoea and trichomoniasis. Investigations for *Chlamydia trachomatis*, *Mycoplasma hominis*, *Ureaplasma urealyticum*, *Candida albicans*, and *Herpesvirus hominis* infections were carried out according to the presenting symptoms. Non-specific genital infections occurred most commonly (25.7%); chlamydia were isolated from 30% of the patients with non-gonococcal urethritis (NGU). The second commonest infection was candidosis (13.5%). Gonorrhoea, which was found in 10.6% of the patients, was diagnosed more frequently in men (13.5%) than in women (6%). No strains of β -lactamase-producing *Neisseria gonorrhoeae* were detected and all were sensitive to penicillin. Syphilis was diagnosed in 4.4% of patients (2% women and 5% men). Condylomata acuminata were diagnosed in 2.8% of patients and more frequently in men (4%). Herpes genitalis and venereophobia were uncommon (1.9% and 1.2% respectively) and were diagnosed only in men.

Introduction

Because of the high prevalence of sexually transmitted diseases (STDs) in the world over the last 20 years, and the lack of reliable statistics in Spain, the departments of microbiology and of dermatology and venereology of the University of Seville School of Medicine decided to establish a centre for the diagnosis of STD in the city in order to meet the need for treatment and evaluation of the problem. In particular, we studied three aspects: clinical and microbiological diagnosis and psychosocial factors in the patients attending the centre. The centre was established in February 1977 with a team of gynaecologists, dermatologists, microbiologists, urologists, and psychologists.

*Paper read at the 30th General Assembly of the International Union against the Venereal Diseases and Treponematoses, East Berlin, June 1980

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Accepted for publication 28 October 1980

Throughout the time the centre has been open it has functioned completely independently of any official Spanish body on account of the lack of interest on the part of the health authorities in this area.

Patients and methods

The centre is located at the School of Medicine in the department of microbiology. It consists of three consulting rooms (one for men, one for women, and another for the use of the psychologist), a waiting room for the patients, and a microbiology laboratory for processing specimens.

Between February 1977 and December 1979, 879 patients have attended the centre (534 men and 345 women); most were university students.

PSYCHOSOCIAL EVALUATION

On arrival patients were first seen for a few minutes by a psychologist, who questioned them briefly about their reasons for attending the centre. This preliminary interview was found to be beneficial, as

many patients arrived for the first time in a very anxious state. The patients were then given a questionnaire to complete. This covered 95 psychosocial aspects of STD: identification, religious factors, family environment, social life, education, income, drugs and alcohol, sexual relationships, hygiene, knowledge of STDs, and contact tracing.

As a control group for the study we selected 300 healthy students of similar background who had not attended the centre; these controls also completed the same questionnaire.

CLINICAL INVESTIGATIONS

The patients were next seen by a physician. During the first two years of the study we used a clinical questionnaire compiled by us, which covered 32 clinical aspects of STD, such as signs, symptoms, and personal history. We are at present co-operating in a multicentre study under the co-ordination of Dr J Wallin (Uppsala, Sweden), using the same clinical questionnaire as the other 10 clinics in the study.¹

MICROBIOLOGICAL INVESTIGATIONS

Syphilis

The Venereal Disease Research Laboratory (VDRL) test² was carried out as a screening procedure on all patients; the fluorescent treponemal antibody-absorption (FTA-ABS) test³ was used to verify the results.

Gonorrhoea

Gram-stained smears of urethral discharge in men and of cervical secretion in women were examined for the presence of leucocytes and Gram-negative intracellular diplococci. Specimens for culture were collected with calcium-alginate swabs, spread immediately on recently made Thayer-Martin plates,⁴ and kept warm at 37°C.⁵ These were incubated in a candle jar at 37°C, and standard techniques (oxidase and sugar fermentations) were used for identification. All the strains of *N gonorrhoeae* isolated were tested for sensitivity to antibiotics and for β -lactamase production by the chromogenic cephalosporin method.⁶

Trichomoniasis

All women were examined for the presence of *Trichomonas vaginalis*, yeasts, and number of leucocytes in the genital discharge using wet preparations with the addition of a drop of cresyl blue. Material from male and female patients whose wet preparations gave negative results was tested for *T vaginalis* by an acridine orange stain.⁷

Chlamydia trachomatis

Samples were collected from the urethra or from the

cervix with calcium-alginate swabs and inoculated into 2SP broth for transport to the laboratory. For culture cycloheximide-treated HeLa 229 cells were used; after 48 and 72 hours' incubation at 35°C these were examined after staining with Giemsa stain.⁸

Genital mycoplasmas

Samples were collected as above and were transported in A3 broth. In the laboratory U9 broth and arginine broth were used for the preliminary isolation of *Ureaplasma urealyticum* and *Mycoplasma hominis* respectively. *M hominis* colonies on A3 agar and PPLO agar were viewed with a microscope. For the detection of *U urealyticum* colonies, urea-MnCl₂ was flooded over the agar plates.⁹

Results

PSYCHOSOCIAL EVALUATION

Using a χ^2 analysis of the results we found significant differences between the patients and the control group. Predominating factors in the patient group were associated with the family—namely a lack of freedom, a dominating father, and a negative relationship between the parents. No significant differences were observed between the sexes, except for those inherent in upbringing such as the greater restrictions on women.¹⁰

CLINICAL AND MICROBIOLOGICAL DIAGNOSIS

The median age of the 879 patients seen in the centre over the three-year period was 23 years; most of the patients were younger but the presence of a few much older patients displaced the median upwards.

The numbers of patients and categories of STD diagnosed on the criteria of signs and symptoms with laboratory confirmation are given in table I. Genital

TABLE I Incidence of STDs in patients attending the clinic between 1977 and 1979

Diagnosis	Men		Women		Total	
	No	%*	No	%*	No	%*
Syphilis	27	5.1	7	2.0	34	3.9
Gonorrhoea	61	11.4	31	9.0	92	10.5
NGU	144	27.0	82	23.8	226	25.7
Candidosis	42	7.9	85	24.6	127	14.4
Trichomoniasis	12	2.2	44	12.7	56	6.4
Herpes genitalis	17	3.2	0	0	17	1.9
Condylomata						
acuminata	21	3.9	4	1.2	25	2.8
pediculosis	7	1.3	2	0.6	9	1.0
Total						
with STDs	331	62.0	255	73.9	586	66.7
without STDs	203	38.0	90	26.1	293	33.3
Total No of patients seen	534		345		879	

*% of total No of patients

candidosis was not considered as an STD. No cases of lymphogranuloma venereum, chancroid, or granuloma inguinale were seen during the study period.

The proportion of men and women who were diagnosed as having an STD rose from 43% and 29% in 1977 to 61% and 56% respectively in 1979.

Among the patients who had no STDs the following diagnoses were made: venereophobia (1.2%), scabies (1%), tinea cruris (0.8%), and folliculosis, seborrhoeic eczema, tinea corporis, and drug allergy (<0.5%).

Syphilis

Thirty-four patients (27 men and seven women) had syphilis; of these 20 had primary and 14 secondary syphilis. No cases of tertiary or late syphilis were seen.

Gonorrhoea

Uncomplicated genital gonorrhoea was diagnosed in 92 patients (61 men and 31 women). Two patients had extragenital infections: one had pharyngeal gonorrhoea and another, a male homosexual, a rectal infection. No strains of *N gonorrhoeae* producing β -lactamase were detected, and all were sensitive to penicillin.

Nongonococcal urethritis (NGU)

Using the diagnostic criteria of Alani *et al*⁸ NGU was diagnosed in 226 patients (144 men and 82 women). *C trachomatis* was isolated in 30% of patients with NGU, *U urealyticum* in 65%, and both *C trachomatis* and *U urealyticum* in 15%. In 20% of the patients no known pathogen was isolated.

INCIDENCE OF STDs

The incidence of STDs in the three years of the study is shown in table II; syphilis has declined slightly from 5.5% in 1977 to 3.6% in 1979. The incidences of the other STDs have increased; NGU was the most common and pediculosis the most uncommon STD.

TABLE II Changes in incidence of STDs (1977-79)

STD	Incidence (%)		
	1977	1978	1979
Syphilis	5.5	3.5	3.6
Gonorrhoea	12.5	8.0	13.5
NGU	12.0	30.0	28.0
Candidosis	23.0	11.0	12.0
Trichomoniasis	3.5	7.0	7.0
Herpes genitalis	1.1	2.0	2.5
Condylomata acuminata	2.0	2.0	4.5
Pediculosis	1.0	1.5	2.0

Discussion

In 1976 and 1977 far-reaching and important political changes occurred in Spain, which foreshadowed an evolution in the behaviour patterns of our society, including greater sexual liberty. As a result of this, an increase in the incidence of STDs was expected. We decided, therefore, that to investigate this problem in Seville we needed to establish a centre for the diagnosis and treatment of STD. In an attempt to achieve a more relaxed relationship between patients attending the clinic and the medical staff, we deliberately selected young medical officers for their lack of prejudice about venereal or sexual matters and for their ability to establish a free exchange of information. In this way we hoped to obtain more complete data from the patients and also to impart to them some basic concepts of hygiene in relation to STDs. From the beginning we decided to see only a few patients a week in the clinic in order to give them more attention and to study the problems in greater depth.

Although, on the one hand, the lack of assistance (financial or otherwise) from official sources of the Spanish Department of Health was a disadvantage in limiting the scope of our activities because of economic factors, on the other hand it allowed us complete freedom to establish a clinic for STD without any external restrictions.

Seville now has 700 000 inhabitants, 20 000 of whom are students of the University of Seville. When we founded the centre it was publicised among the students; thus, in the first year all the patients were students. In 1978 television and the press made the clinic well known in Spain and the median age of the patients increased.

Two salient individual factors resulting from our psychosocial studies were the lack of religious belief and economic independence, both of which encouraged greater sexual freedom in the patients than in the control group. It appeared that social and family factors influencing patients with STDs had led, from an early age, to greater emotional instability in their search for total freedom. They had sexual relationships at an earlier age (16.5 years for women and 16 years for men) than the control group (18 years for both sexes).

Unfortunately, there are still no reliable statistics on STDs in Spain as a whole, and our results may not give a true picture nationally or in Seville itself. They are, however probably representative of the true incidence of STD in a university population.

As in many parts of the world^{13 14} NGU was found to be the most common STD (27% in men and 24% in women). These figures show that the incidence of NGU is similar to that in other countries. The

proportions of the various pathogens isolated from patients with NGU in our centre is in general agreement with results published elsewhere.^{9,15} The second commonest condition was gonorrhoea (13.5% in men and 6% in women). These figures were lower than those reported from Sweden,¹⁶ Britain,¹⁷ Nigeria,¹⁸ East Africa,¹⁹ and the USA.²⁰ Syphilis is, however, very common in Spain, if our results (5% for men and 2% for women) are compared with the previously cited reports. Perhaps this is due to fewer official health surveillance programmes for syphilis in Spain in recent years. Our figures for the incidence of trichomoniasis were higher, and those for herpes genitalis, condylomata acuminata, and pediculosis lower, than those in the reports cited above.

Reviewing the first three years' work of our STD centre (the first and only in Spain) we have reason to be pleased with the functioning of the clinic and the success we have achieved in reaching the public. Nevertheless, it is evident that help from official sources would enable us to broaden our approach and provide a more extensive diagnostic service. In Spain, society needs more support from the Department of Health to achieve an effective control of STDs, especially of syphilis, which appears to be an important health problem in our country.

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