# Sexually transmitted diseases in a general practice

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SUMMARY. A pilot study of the occurrence of latent sexually transmitted diseases in a sexually active sample was carried out in a general practice. The conclusions confirm that a reliable diagnosis of a sexually transmitted disease cannot be made in general practice when based only on the opinion of the patient. Full venereological history, examination and microbiological back-up are essential. The microbiological investigations should be broad-based and should not rely on one specimen or method.

## Introduction

FIGURES for sexually transmitted diseases are available from the Chief Medical Officer of the DHSS, and are published annually. These data are compiled from statistics drawn from the special diseases clinics throughout England. For some years I had been curious to note that no general practice figures were available; this seemed a serious omission. The other point which finally stimulated the work of this paper was the unremitting flow of women who presented merely for treatment following their already pre-conceived opinions as to the diagnosis, for example thrush or cystitis. Were they correct in their assumptions, or should general practitioners insist on full investigations?

## Methods

The survey reported here took 18 months to carry out, during which time 511 female and 38 male patients were checked for sexually transmitted diseases (STD). Altogether 30,000 patients were seen at the surgery in the study period, half of whom were elderly or children; among the remaining 15,000, the ratio was about four women to three men.

The survey was conducted in a general practice which has approximately 8,000 patients. There are three principals. The sample of 511 women and 38 men was gathered and grouped as follows:

### *Women*

1. Asymptomatic: those who presented with conditions requiring vaginal examination but with no relevance to STD, for example review of oral contraceptive and IUCD, routine cervical cytology or visits for gynaecological reasons other than infective.

2. Symptomatic: those who complained of vaginal discharge, soreness, dyspareunia, irritation, dysuria and 'thrush' and 'cystitis'.

The screening techniques for the women were:

a) Urinalysis—by Labstix method.

b) Gram stain film for gonococcus identification.

c) Wet-film microscopy for the identification of *Trichomonas* (TV) and *Candida.*

d) Modified Transgrow slope—samples of endocervical canal material inoculated and stored at 35°C and transferred to the laboratory for analysis (Brown, 1974).

e) *Trichomonas* culture—a cotton swab from high vaginal discharge put into the medium.

f) Stuart's transport medium—cotton swab sampling from high vaginal discharge placed in the medium for TV, *Candida,* gonococci and other bacteria identification.

g) Cervical smears were taken in the normal way not only to identify abnormal cervical cytology, but also to assist in the diagnosis of TV, *Candida* and herpes infections.

h) Serum tests for syphilis.

Procedures a–c were carried out in the surgery. Samples for the remaining procedures were sent to hospital laboratories. The resources at the author's disposal did not run to specialized testing of the various organisms that are now generally implicated in pelvic inflammatory disease (PID), for example *Chlamydia, Myco-*

**Table 1.** The findings in asymptomatic females.*

| Presentation | Number of patients | Clinical and laboratory findings | | | | | |
|---|---|---|---|---|---|---|---|
| | | Nil | Gonococcus | *Trichomonas* | *Candida* | Herpes | Warts |
| Cervical smear | 52 | 43 | — | 4 | 5 | — | — |
| Oral contraceptive | 86 | 68 | — | 4 | 13 | 1 | 2 |
| IUCD | 78 | 71 | — | 2 | 6 | — | — |
| Pregnancy | 77 | 52 | — | 8 | 18 | 1 | — |
| Post-natal examination | 25 | 19 | — | 1 | 6 | — | — |
| Miscellaneous gynaecology** | 20 | 19 | — | — | 1 | — | — |
| Total STD*** | 338 | 272 | — | 19 | 49 | 2 | 2 |

*In Tables 1, 2 and 3, the 'Total STD' figures are the total numbers of pathogens found and therefore bear little resemblance to the total number of patients, as some patients had more than one organism isolated.
**These were presentations including infertility, retained tampon, vaginal cysts, menstrual disorders, menopausal symptoms, stress incontinence and one case of rape.
***There were, in addition, 41 cases of other potential pathogenic bacteria isolated from the high vagina throughout the female groups.

*plasma* or *Bacteroides* (Hirsch, 1978; Anderson and Madsen, 1979). The diagnoses were made clinically, based on volunteered or elicited symptoms (including deep penetration dyspareunia) combined with a bimanual examination and microbiological tests.

### *Men*

Men do not visit their general practitioner unless they are symptomatic and as a group do not provide the clinician with a neat group for investigation. I therefore decided that investigation and full screening should be reserved for those who were symptomatic and therefore potentially at risk. The following procedures were carried out for all the male patients:

a) Urinalysis

b) Urethral film for Gram stain.

c) Wet-film microscopy for TV and *Candida.*

d) Modified Transgrow culture of smears taken by plastic loop from the urethra for gonococcus identification.

e) Smears using plastic loop placed in the *Trichomonas* culture medium.

f) Venous blood taken for serological tests for syphilis.

## Results

Of the 511 women who presented, the average age was 27 years. The youngest was 13 and the oldest was 60. Twenty-nine were under the age of 18. All said they were sexually active.

### *Women: asymptomatic* (Table 1)

A total of 338 women came into this group (65 per cent of the total of women in the survey). From Table 1 it can be seen that the majority assembled because of matters dealing with either conception or contraception.

Two hundred and forty-seven of the 338 (73 per cent) had no demonstrable STD, leaving 92 (27 per cent) who had one or more infections. It is important to observe that many patients had two or more co-existing conditions.

### *Women: symptomatic* (Table 2)

One hundred and seventy-three patients were symptomatic (3 per cent of the female group as a whole). The terms 'discharge', 'soreness' and 'irritation' were sufficient, it was felt, to cover most of the vulvovaginal symptoms, and the terms 'thrush', 'cystitis', 'warts' and 'piles' were all words used, somewhat inaccurately, by the patients. The group who presented with abdominal pains were clinically distinguished as being PID and were thus singled out from other causes of abdominal pain.

In 72 female patients no pathogens were isolated, thus leaving a total of 101 (58 per cent of this group) with one or more STDs.

### *Male patients* (Table 3)

Of the 38 men who presented over the 18-month period, the youngest was 15 and the oldest was 46. Only two were under the age of 18; all were sexually active. In this group the terms 'warts', 'piles', 'spots' and 'lumps' were all used by the patients on presentation. The other symptoms require little comment, as these are more typical and self-explanatory.

### *Diagnostic methods*

When considering sexually transmitted diseases in general practice, diagnosis cannot be made purely on symptoms, signs and "just by taking an HVS". In this survey, by using numerous techniques for identifying single organisms it was possible to find the sensitive variation of laboratory results (Table 4). Of the methods available, cervical cytology seems to have been the most successful in identifying the bulk of *Tricho-*

**Table 2.** The findings in symptomatic females.

| Presentation | Number of patients | Clinical and laboratory findings | | | | | |
|---|---|---|---|---|---|---|---|
| | | Nil | Gonococcus | *Trichomonas* | *Candida* | Herpes | Warts |
| Irritation, discharge, soreness | 125 | 50 | 2 | 18 | 54 | 9 | 1 |
| Thrush | 9 | 3 | 1 | — | 5 | — | — |
| Cystitis | 9 | 5 | — | 1 | 3 | — | — |
| Warts | 6 | — | 1 | 2 | — | — | 6 |
| Deep dyspareunia (PID) | 19 | 15 | 1 | 2 | 2 | — | — |
| Request for VD check | 3 | 2 | — | — | 1 | — | — |
| Contact of known STD | 1 | — | 1 | — | — | — | — |
| Piles | 1 | — | — | — | — | — | 1 |
| Totals STD | 173 | 75 | 6 | 23 | 65 | 9 | 8 |

**Table 3.** Male patients presenting with symptoms and the related STD.

| Presentation | Number of patients | Clinical and microbiological findings | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Nil | Syphilis* | Gonococcus | NSU** | *Trichomonas* | *Candida* | Herpes | Warts |
| Discharge/dysuria | 10 | — | — | 4 | 6 | — | — | — | 1 |
| Rash and/or irritation + soreness | 12 | — | 1 | — | — | — | 11 | — | — |
| 'Warts' | 6 | — | — | — | — | — | — | — | 6 |
| Painful, swollen testis clinically epididymo-orchitis | 5 | — | — | 1 | 4 | — | — | 1 | 1 |
| Contact of known STD | 1 | 1 | — | — | — | — | — | — | — |
| 'Piles' | 1 | — | — | — | — | — | — | — | 1 |
| Requesting a VD check | 1 | — | — | — | 1 | — | — | — | — |
| 'Lumps' or 'spots' | 2 | — | — | — | — | — | — | — | 2 |
| Total STD | 38 | 1 | 1 | 5 | 11 | — | 11 | 1 | 11 |

*Treponemal testing led to a positive serology in a man with secondary syphilis.
**It is noted, with much regret, that due to factors beyond the control of this survey, that facilities for *Chlamydia trachomatis* culture were not available in Birmingham at the time that the work was carried out.

*monas* in the females—39 out of a total 42 (93 per cent). The other two methods, Stuart's transport medium and *Trichomonas* culture, identified only eight (19 per cent) and 14 (33 per cent) respectively. After results for the first 100 female patients were available it was thought that the isolation of *Trichomonas* by cultural methods seemed low, so a second *Trichomonas* culture of a different commercial pharmaceutical company was employed in parallel for a further 100 tests. The results were the same in both media.

There were 27 positive TVs found on cervical cytology; 14 were asymptomatic and 13 had symptoms.

## Discussion

By far the greatest contributing infection in the asymptomatic women was the presence of *Candida*—49 out of 338 (14 per cent). Of these, half were pregnant or immediately post-natal. Nineteen of the asymptomatic women had *Trichomonas* and in eight there were some other potential pathogenic bacteria identified on HVS. These were one or more of the following: *Staph. aureus,* beta haemolytic streptococci, *Strep. faecalis, E. coli* and *Klebsiella.* Only one routine serology test was positive, and this was in a West Indian pregnant woman in whom a previous infection of yaws was established.

**Table 4.** Comparative findings of the various methods of laboratory investigation used in the isolation of *Trichomonas vaginalis, Candida* and gonorrhoea in the female groups. (Percentages are of total in each case.)

| Method | *Trichomonas* | *Candida* | Gonorrhoea |
|---|---|---|---|
| Cervical cytology | 39 *(93%)* | 26 *(23%)* | — |
| TV culture | 14 *(33%)* | 69 *(61%)* | — |
| Stuart's medium HVS | 8 *(19%)* | 77 *(61%)* | 2 *(33%)** |
| Mod. Transgrow | — | — | 6 *(100%)** |
| Pathogen isolations** | 42 | 114 | 6 |

*Not statistically large enough numbers for investigation.
**The columns do not add up to the total number of cases as many pathogens were identified by more than one method.

In the symptomatic women the picture was somewhat

different, with a 38 per cent diagnosis of candidiasis, 13 per cent *Trichomonas,* 5 per cent herpes, 5 per cent warts and 3 per cent gonorrhoea. In the six cases where gonorrhoea was identified, further oral, urethral and rectal swabs were taken and in only one case was gonococcus isolated at another site. This was rectal, but anal intercourse was denied. Acute salpingitis was found in one woman with a positive culture of gonococcus. It was within this group of symptomatic women that it was felt that most of the danger of misdiagnosis could lie, particularly when the patient offered some diagnosis herself, such as 'thrush', 'cystitis' or 'warts'. In only one of the cases of gonorrhoea did the patient have any suspicion of the diagnosis. One woman even presented saying that she had "thrush once more". She had previously been treated following investigation three months earlier for candidiasis: as the sensation felt the same she had made the assumption herself that the diagnosis was the same. All six cases, incidentally, had co-existing pathogens.

Like 'thrush', 'cystitis' is an extremely popular erroneous term amongst patients and, if taken at face value, can lead to misleading results. Three of the nine patients who presented with 'cystitis' had candidiasis and one had TV where their respective MSUs were sterile. It is of interest that all nine cases of herpes identified complained of soreness or irritation, and without proper investigation could easily be misinterpreted as candidiasis. Seventy-nine (45 per cent) of the symptomatic females had no demonstrable pathogens. One woman presented with 'piles'—a popular misbelief that anything that feels abnormal in or around the anal canal must be one thing, an error which can be continued and extended by the general practitioner unless a close examination is made. In this case the diagnosis was one 2 cm diameter condyloma accuminata.

On considering the male group it is apparent that men do not consult their general practitioner as often as women do about genital problems. This must in part be a reflection of the greater exposure of women to their doctors (through contraception, conception and screening for cervical cancer) and perhaps also of the possibility that men are more likely to go quietly away to the local Special Clinic or to the private sector if they are anxious or at the first sign of positive symptoms, which are more readily apparent in the male genitals. It was felt that the number of patients who presented with penile rashes was quite high (11 cases of proven candidiasis, confirmed microsopically with a wet preparation). The partners of five of the 11 were checked. On examination, all five had vaginal *Candida.* Once again, one man inaccurately diagnosed his anal condyloma accuminata as 'piles'. The only case of active syphilis was discovered in a 41 year-old man, who reluctantly admitted homosexuality when his positive serology returned from the laboratory, following routine investigation of a suspicious rash. He had refused these blood investigations on two previous occasions. If I had not persisted, it is unlikely that the diagnosis would have been confirmed for some time. The reason for the delay was a phobia of needles.

It is very easy for a busy general practitioner to have a naïve, idealistic faith in his or her patients' good health and good judgement, and to hope that the patient's own presenting diagnosis is correct. It is all too easy to accept the patient's explanation, "I have thrush again", when the surgery programme is already running half an hour late. It is impractical and undesirable for the general practitioner to carry out complicated special tests or even to attempt treatment of the serious sexually transmitted diseases, but in these days of increasing sexual freedom and lack of barrier methods of contraception, the general practitioner should be aware of the pitfalls of STD diagnosis and, more important, be able to uncover latent infection.

The high vaginal swab has become the standard instrument of general practice vaginal diagnosis, but of the six cases of gonorrhoea found among the women in this survey only two of them were diagnosed in the high vaginal swabs (Table 4). Among the men, gonococci were grown only in one Stuart's culture medium of the five affected. All 11 cases from both sexes were positively identified using the Modified Transgrow slopes and by direct Gram staining microscopy. The reasons for this alarming fact are numerous. Among them will be the fragile existence of the gonococcus outside perfect conditions, and the sometimes imperfect temperature control between surgery and laboratory. Another factor must be the tendency for overgrowth of other organisms, for example strains of staphylococci and *Candida.* The identification of TV by special TV culture (33 per cent) and Stuart's medium (19 per cent) was also disappointing when compared with the cytological method of the cervical smear (93 per cent) (Table 4). The reasons are probably similar, but the discrepancy will also be because it is relatively easy to identify the organism at the cervix, where it may exist without symptoms, whereas in a vaginal discharge its existence may be so scanty as to not appear viable in a culture. The results for *Candida* were obviously much better in both TV culture (60 per cent) and Stuart's medium (68 per cent), but disappointing in the cervical cytology reports (23 per cent). *Candida* grew on numerous Transgrow slopes, but not to a significant number or colony size.

## Conclusions

It is suggested that at the time of all vaginal investigations of symptomatic women in general practice, a full speculum and bi-manual examination is accompanied by swabs taken in Stuart's medium, a cervical smear taken for cytology, and some specific test for gonococcus, preferably a Transgrow slope or, if not available, simply a dry slide sent to the laboratory for Gram staining.

## References

Andersen, O. P. & Madsen, H. (1979). *Chlamydia-infektion sam arsag til akut salplingitis. Ugeskrift for Laeger,* **141,** 2900. (Engl.Abstr.)

Brown, J. D. (1974). Modified transport and growth mediums for the cultivation of *Neisseria* gonorrhoea. *British Journal of Venereal Diseases,* **50,** 199-201.

Department of Health and Social Security. Chief Medical Officer (1980). Sexually transmitted diseases: extract from the Annual Report. *British Journal of Veneral Diseases,* **56,** 178-181.

Hirsch, H. A. (1978) Treatment of acute pelvic infections. *Gynakologe,* **11,** 221-228.

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## US family physicians

The proportion of US doctors entering primary care is no longer increasing. The figures are: 1970, 38 per cent; 1974, 52 per cent; 1975, 58 per cent; 1976, 59 per cent; 1980, 58 per cent. Within these figures is disguised an increasing proportion (14 per cent in 1980) of those describing themselves as in family practice, in contrast to internal medicine and paediatrics.

Source: Steinwachs, D. M. *et al.* (1982). Changing patterns of graduate medical education. *New England Journal of Medicine,* **306,** 10-14.

## Sulphinpyrazone in post-myocardial infarction

In a multicentre double-blind randomized study comparing the effects of sulphinpyrazone 400 mg twice daily with those of placebo in patients after myocardial infarction, 727 patients (365 on sulphinpyrazone, 362 on placebo) were enrolled and followed up for 12–48 months (mean 19.2). Treatment began 15–25 days after infarction. There were 49 reinfarctions (nine fatal, 40 non-fatal)—34 occurred in the placebo group and 15 in the sulphinpyrazone group, a reduction of 56 per cent. In addition, a significant reduction of thrombo-embolic events was noted. It is concluded that sulphinpyrazone is effective in the prevention of reinfarction in patients surviving a recent myocardial infarction.

Source: Report from the Anturan Reinfarction study (1982). Sulphinpyrazone in post-myocardial infarction. *Lancet,* **1,** 237-242.

# COLLEGE ACCOMMODATION

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