

PRACTICE OBSERVED

*Practice Research***Prevalence of Gardnerella vaginalis: an estimate**

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Abstract

To assess the prevalence of *Gardnerella vaginalis* in the community 300 women aged 16-59 were randomly selected from a general practice's age-sex register and invited to attend for a health check. Out of 282 women who were eligible to attend, 192 did so. They were asked whether they had any vaginal symptoms, and swabs were taken from 182 women for culture for *G vaginalis*. Sixty women were positive for *G vaginalis*, of whom 26 had symptoms.

Infections with *G vaginalis* may be present in women who have no symptoms. By careful questioning, examination, and side room testing general practitioners may be able to diagnose these infections in such women consulting them for other reasons.

Introduction

In a previous study we found *Gardnerella vaginalis* in 53% (81/154) of adult women who consulted general practitioners about symptoms of vaginitis and in 22% (30/138) of a control group of women who consulted for cervical smears and family planning checks. *Gardnerella* was thus highly associated with symptoms of vaginitis and yet was present in an appreciable proportion of apparently symptomless women.¹ Other reports of *G vaginalis* have been from specialist clinics or selected populations²⁻⁴; in this study we attempted to estimate the prevalence of *G vaginalis* in the community.

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Patients and methods

In the National Health Service practice of the department of general practice at this university we selected 300 women aged 16 and over and under 60 at random from the age-sex register and invited them to attend for health checks, including measurement of blood pressure, urine analysis, breast examination, and a cervical smear if this was due. The invitations (up to three, as necessary) were signed by a nursing sister, and the women were asked to make appointments directly with her. In addition, the patients' medical records were flagged, and if they attended the health centre for other reasons they were invited personally to attend the health checks.

At the health check the women were asked about their history of cervical smears and any vaginal symptoms, a standardised schedule of symptoms being used, and they were examined vaginally. Swabs were taken for culture for *Gardnerella* and, if the women had symptoms or signs (excess discharge, cervicitis, or abdominal pain) for chlamydia. The procedures for collecting the swabs and isolating the organisms in culture have been described previously.¹

Results

Eighteen patients were excluded because they had died (one), had a terminal illness (one), or had left the practice (16), so the effective denominator for the study was 282 women. The table summarises the results

Prevalence of Gardnerella vaginalis by age in women invited for health checks. Values are numbers (percentages) of women*

Age (years)	≥16-19 (n=9)	20-29 (n=65)	30-39 (n=93)	40-49 (n=57)	50-59 (n=58)	Total (n=282)
Patients who attended	8 (89)	42 (65)	71 (76)	44 (77)	27 (47)	192 (68)
Swabs taken	7 (78)	40 (62)	69 (74)	41 (72)	25 (43)	182 (65)
<i>Gardnerella</i> present	4 (57)	11 (28)	25 (36)	13 (32)	7 (28)	60 (33)
With anaerobes	1	1	9	6	3	20
Without anaerobes	3	10	16	7	4	40
With symptoms	3	5	11	4	3	26
Without symptoms	1	6	14	9	4	34

**G vaginalis* and other bacteria cultured by Public Health Laboratory Service.

obtained in the 192 women who attended by age. Of the 90 women who did not attend, 41 did not do so because of a recent cervical smear (28), previous hysterectomy (six), previous refusal of smears (three), and severe long term illness (four); no definite reason was identified in the remaining women. Older women were more likely not to attend.

Ten women who attended did not have vaginal swabs taken because they were virgins, were pregnant, or had had a hysterectomy. Of the 182 women from whom swabs were taken, 60 (33%) were positive for *G vaginalis* on culture by the Public Health Laboratory Service. Nearly half of the women positive for gardnerella (26/60, 43%; 14% (26/192) of all the women examined) reported symptoms of vaginitis, defined as at least two of increased discharge, a smell like that of "high" cheese, and discomfort related to intercourse.⁵ Anaerobes were cultured with gardnerella in twice as many patients as gardnerella alone and in 11 of the 26 women with symptoms and nine of the 34 without symptoms.

Discussion

The population resident within the catchment area from which the women were selected contains a higher proportion of people in social classes III and IV than the United Kingdom average. The invitations were for health checks and referred specifically to measurement of blood pressure, urine analysis, breast examination, and cervical smears, so were not appealing for volunteers purely for the purposes of scientific or medical comparison. The invitations were couched in such terms because of the personal nature of the interviews and examinations in a sensitive subject. Self selection among volunteers for these health checks was inevitable, but whether it introduced bias that materially affected the results is open to question.

Non-attenders who subsequently visited the practice were asked why they did not take up the invitation. Older women tended to give answers along the lines of "I never had a health check before and I'm not going to start needing one now" and "I'm afraid of having a disease diagnosed," so that among these women a selection bias may have been operating whereby women with symptoms and those positive for gardnerella did not attend. Among younger women (aged <40) the commonest reason for non-attendance was a recent cervical smear. As cervical smears are widely associated with the concept of well woman clinics and were mentioned specifically in the letter of invitation any self selection bias among younger and sexually active women was probably towards including patients with symptoms and those potentially positive for gardnerella.

The response rate in our study was less than ideal, and the sample may not have been wholly representative of the general population. Though it would have been academically desirable to invite volunteers to have vaginal swabs taken for the sake of the study, we believed that the practical considerations of maintaining the good will and cooperation of patients in the practice was important. Consequently, we present our results as an estimate of the prevalence of gardnerella in the community but suggest that the upper and lower bounds of the estimate should be considered. With the most optimistic possible assumption, that none of the non-attenders and those who did not have swabs taken were infected with gardnerella, the prevalence would be 21% (60/282); with the most pessimistic assumption, that all these women were infected, the prevalence would be 53% (150/282).

The prevalence of *G vaginalis* in this study (33%) lies between that previously reported in women with vaginitis (53%) and in women who consulted for cervical smears or family planning checks (22%),¹ and this lends credence to the present estimate. Despite the potential bias discussed above we suggest that 33% is a reasonable

estimate of the prevalence of *G vaginalis* in the community. Although 43% of the women found to be positive for gardnerella in the present series showed symptoms of vaginitis, several women in the control group in the previous study also showed similar symptoms. There is clearly some vaginitis in the community, and the prevalence of *G vaginalis* in truly asymptomatic women may be deduced as being somewhat less than 20%, perhaps about 10%.

The implications for general practitioners are that gardnerella infections occur among apparently asymptomatic women and that women who consult for other reasons may be covertly consulting for their vaginitis. A few questions about vaginal discharge and discomfort, together with a clinical examination, the detection of a "high" cheese smell, microscopic examination for "clue cells," and the amine test could confirm gardnerella vaginitis.⁶ According to several trials gardnerella can be successfully treated with metronidazole⁷⁻⁹ or chlorhexidine pessaries.¹⁰

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ONE HUNDRED YEARS AGO

MR. D. WIGHTMAN, coroner, held an inquest at Sheffield on February 6th, on the body of a man who had committed suicide by cutting his throat whilst suffering from small-pox. He proceeded to swear the foreman, and omitted the usual words "of whose body you shall have present view." The rest of the jury were sworn. The Coroner then remarked that he had no law to warrant him allowing the jury to escape viewing the body, but in this case, when he looked at the consequences which might probably arise, he was not at all surprised at the jury objecting to going into a room reeking with small-pox, and in which was the body of a man who had died from that disease. He thought that was a reasonable excuse for not going to see the body. It was his duty, he knew, to insist, but he intended to brave the consequences and see what was said. He would not, as a jurymen, like to go and view the body, not so much for himself as for his wife and family. If the jury said they did not like to go, he felt he would not be justified in making them do so. The inquest proceeded, and at the close the jury thanked the coroner for his consideration.

(*British Medical Journal* 1888;i:310)