Factors associated with pediculosis pubis and scabies

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Abstract

Objective—To ascertain factors associated with genital pediculosis and scabies infestations among attenders at an STD clinic.

Design—Cross sectional assessment of potential risk factors by multiple logistic regression.

Setting—A central city sexually transmitted diseases (STD) clinic in Adelaide, South Australia.

Subjects—All men and women patients attending from 1988 to 1991.

Results—Pediculosis pubis was diagnosed in 205 of 12170 (1.7%) men and 65 (1.1%) of 6125 women, and scabies in 56 (0.5%) men and 6 (0.1%) women attending an STD clinic from 1988–1991. Independent risk factors by multivariate analysis for pediculosis pubis in women were pregnancy (odds ratio (OR) = 2.3), sex outside the state (OR = 2.2) and age under 25 (OR = 2.0). Many factors were associated with pediculosis pubis in men, including no steady partner (OR = 1.4), multiple partners (OR = 1.6), being unmarried (OR = 2.0) and homosexual behaviour (OR = 1.6). None of these factors was associated with scabies infestation which was strongly associated with being Aboriginal (OR = 6.8) and being unemployed (OR = 2.5).

Conclusion—In this setting scabies appears to be determined by socio-economic factors and pediculosis pubis predominantly by sexual activity factors.

Introduction

Although epidemics of scabies and human lice have been observed for centuries very little has been recorded about the epidemiology of the sexually transmitted forms of these diseases^{1,2} which are seen commonly in sexually transmitted disease clinics. In the present study, attenders at a sexually transmitted disease (STD) clinic from 1988–1991 were examined for scabies and pediculosis pubis and a wide range of independent variables analysed by multiple logistic regression to define independent correlates of infestation.

Methods

Following standardised risk assessment (including the variables listed in the table) for all STDs, patients were examined to detect evidence of infestation. Pediculosis was

diagnosed by observation of pubic lice or their eggs attached to pubic hairs, scabies by observation of typical lesions in association with supportive history (such as nocturnal itching, exposure to infestation). Where possible diagnoses of scabies were confirmed by microscopic demonstration of the mite, but over 50% of diagnoses were made on clinical grounds. Clinical diagnoses were confirmed by full time specialist clinicians.

Factors associated with infestation were detected by means of multiple logistic regression using SPSS/PC⁺ V3.1.³ The dichotomous independent variables compared patients with the specific infestation with those not affected. The dichotomous independent variables were those found to be associated with one or more STD in this clinic (table). Univariate analysis was performed using Epi Info.⁴ Confidence limits (95%) for odds ratios were calculated using Cornfield's approximation.⁵ Confidence limits for the Mantel Haenszel weighted odds ratio⁶ (summary odds ratio) were calculated using the formulas of Robins, Greenland and Breslow.⁷ Because of the small number of scabies infestations in women, risk factors were not analysed for this group.

Results

Pediculosis pubis was diagnosed in 205 (1.7%) of 12170 men and 65 (1.1%) of 6125 women, and scabies in 56 (0.5%) men and 6 (0.1%) women. Of these men 6029 (50%) had no illness, 4307 (35%) had one or more STDs (as defined in the table) and 1834 (15%) had only non-STD illness, and 3273 (53%) women had no illness, 1856 (30%) had one or more STDs and 996 (16%) had only non-STD illness. The factors independently associated (by multiple logistic regression) with infestation are shown in the table. Of the 431 women in this study who were pregnant 308 (71%) were never married, 80 (19%) were married and 43 (10%) were formerly married. There was no significant difference in marital status of those with pediculosis and those not having pediculosis ($p = 0.57$). Univariate analysis showed a positive association between scabies and tattoos (OR = 2.2 (1.2–4.1)) due to confounding with being unemployed and being Aboriginal (summary OR = 1.5 (0.8–2.8)), and with IV drug use (OR = 2.4 (1.2–4.9)) due to confounding with the same factors (summary OR = 1.7 (0.8–3.4)).

Similarly positive associations of IV drug use with pediculosis in men (OR = 1.8 (1.2–2.7) by univariate analysis) was due to confounding

Table Factors associated with pediculosis pubis in men and women and scabies in men, 1988–1991. All odds ratios from multiple logistic regression

Factor*	Pediculosis				Scabies	
	Women		Men		Men	
	Odds ratio (p value)	% of positives	Odds ratio (p value)	% of positives	Odds ratio (p value)	% of positives
Pregnant	2.3 (0.03)	15	—	—	—	—
Age under 25	2.0 (0.03)	69	1.6 (0.001)	50		38
Sex outside state†	2.2 (0.02)	20		14		18
Genital		23	0.3**	8	0.4 (0.09)	7
Discharge/Dysuria		37	0.6 (0.004)	16	0.5 (0.07)	16
Other STD‡		15	0.3 (0.0006)	4	0.2 (0.07)	2
STD contact§		51	1.4 (0.04)	67		64
No steady partner†		36	2.6 (0.0003)	60		37
Multiple partners†		90	2.0 (0.02)	93		88
Unmarried		14	1.5 (0.03)	21		27
Tattoos		—	1.5 (0.007)	48		36
Uncircumcised		—	1.6 (0.01)	21		18
Homosexual		20	1.4 (0.06)	30	2.5 (0.001)	45
Unemployed		0		1	6.8 (0.0001)	9
Aboriginal		—		—		—

*Being a prostitute, oral contraception, parity and gravidity were not associated with pediculosis in women; and past STD, IV drug use, being Asian or having gonorrhoea or chlamydia were not associated with any of the infestations in men or women.
†In the past 3 months.
‡Includes gonorrhoea, syphilis, herpes, chlamydia, warts, trichomoniasis, bacterial vaginosis, molluscum contagiosum.
§Notifiable STDs—gonorrhoea, chlamydia, syphilis.
||p > 0.10
**p < 0.0001

with being unemployed and tattooed (summary OR = 1.4 (0.9–2.2)), and nulliparity with pediculosis in women (OR = 2.3 (1.1–5.0) by univariate analysis) was due to confounding with age (summary OR = 1.6 (0.8–3.2)).

Discussion

This study confirms the suggestion that pediculosis pubis is more common in unmarried persons under age 25,² but is in direct opposition to the observation of higher prevalence of scabies among whites than among non-whites⁸ and a direct relationship with gonorrhoea.⁹ The epidemiology defined by multivariate analysis is quite distinctive. Pediculosis pubis in women was independently associated with only three of the factors studied (pregnancy (OR = 2.3), sex outside the state (OR = 2.2) and age under 25 years (OR = 2.0). The dominance of unmarried women (81%) among those pregnant shows that the study sample was not typical of the general population in this regard, and the independent association of pregnancy and pediculosis may not occur in the wider community. Pregnancy (which is presumably unwanted in many of these unmarried women) is probably a marker of some facet of sexual behaviour which was not measured by the other independent variables (such as multiple partners or no steady partner) used in the model.

Pediculosis in men was associated with many

factors, including several which are characteristic of STDs (viz no steady partner (OR = 1.4), multiple partners (OR = 2.6), age under 25 years (OR = 1.6), being unmarried (OR = 2.0), homosexual behaviour (OR = 1.6)). Although scabies and pediculosis in men were both inversely associated with being an STD contact, and with other STDs collectively, the former, alone, was strongly associated with being Aboriginal (OR = 6.8) and being unemployed (OR = 2.5), and not associated with the factors more directly related to sexual behaviour.

Although pediculosis in men was associated with numerous markers of sexual activity (for example multiple partners and homosexual behaviour) it was inversely associated with having other STD. This reflects the subtleties of STD epidemiology whereby apparently similar diseases have quite marked differences in some facets of their epidemiology. Thus it is well documented¹⁰ that in men gonorrhoea is directly associated with and chlamydia inversely associated with homosexual behaviour. Gonorrhoea and chlamydia are directly associated with having multiple sex partners for men but not for women.^{10 11} Perhaps differences in transmission rates and mechanisms contribute to disparities in these relationships, and transmission by body contact in the absence of intromission could be a factor.

In this setting, scabies appears to be determined predominantly by socioeconomic factors and pediculosis predominantly by sexual activity factors. These differences are of prime importance in planning strategies to reduce the frequency of these diseases.

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