Group B streptococcus carriage and vulvovaginal symptoms: causal or casual? A case-control study in a GUM clinic population

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Objectives: The isolation of group B streptococcus (GBS) on routine swabs taken from genitourinary medicine (GUM) clinic attendees is a common finding. The relation of GBS to vulvovaginal symptoms is unclear, creating confusion about management. This case-control study tested the hypothesis that detection of GBS on routine clinical specimens is not causally related to vulvovaginal symptoms in female GUM clinic attendees.

Methods: Data were collected on all female GUM clinic attendees who had GBS isolated from anogenital swabs between July 1999 and July 2001. Controls were randomly selected from all new and rebooking female GUM clinic attendees. Controls were group matched for age with cases and were included only if a sexual health screen was performed and the results of this were available.

Results: 118 cases and 308 controls were identified during the study period. There was no significant difference between cases and controls in patient demographic or behavioural characteristics, the presence of genital co-infection, or vulvovaginal symptoms. There was no relation between symptoms and quantitative growth of GBS reported by the laboratory in either cervical or urethral swabs. Only nine cases had high vaginal swabs taken, in whom there was a significant association between a heavy growth of GBS and vulvovaginal symptoms (p<0.008).

Conclusion: The isolation of GBS from routinely collected genital swabs in female attendees of a GUM clinic is not causally related to vulvovaginal symptoms. We recommend that patients should receive this advice and should not be treated with antibiotic therapy for this indication.
the case notes—vulvar erythema, vulvar swelling, vaginal erythema, or vaginal desquamation. Isolated vaginal discharge, in the absence of symptoms, was not classified as a clinical sign.

Data were retrospectively collected from case notes using standardised proformas, entered onto ACCESS 97 (Microsoft) software and analysed using SPSS for Windows v11.0. A univariate comparison of demographic, behavioural, and clinical variables between cases and controls was performed using $\chi^2$ tests.

RESULTS

Patient characteristics

In all, 131 cases of group B streptococcal infection were identified during the study period, of which 118 (90.0%) case notes were available. A total of 308 controls were identified, representing 7.7% of total new and rebooked female registrations during the same time period. There was no significant difference in the age distribution of the cases and controls, which was consistent with the age profile of the female population attending the GUM service in Glasgow during the study period; data not shown.

Patients with GBS did not differ from controls in respect of their sexual behaviour, past history of STI, current smoking status, or diagnosis of other defined genitourinary infections (vaginal candidiasis, bacterial vaginosis, trichomoniasis, bacterial urinary tract infection, genital herpes, chlamydial or gonococcal infection; data not shown). Data were also collected on same sex partnerships (one control patient identified) and blood borne viral co-infection (none identified); 76 (64.4%) cases and 201 (65.3%) controls were documented as being in a regular relationship.

Site(s) of GBS isolation

In all, 109 cases had cervical swabs taken, of which 85 (77.9%) were positive; 65 of those (76.4%) were reported as a heavy growth of GBS. A total of 106 urethral swabs were taken, of which 95 (89.6%) were positive; 71 of those (74.7%) were reported as a heavy growth of GBS. Only nine high vaginal swabs were taken in the 118 cases, of which eight (88.8%) were positive and seven of those were reported as a heavy growth of GBS. One positive rectal swab was obtained, which showed a heavy growth of GBS.

Clinical features (table 1)

There was no difference in the proportions of cases and controls who complained of vulvovaginal symptoms (table 1). When all patients were considered, there was an association between GBS and the presence of clinical signs. However, after exclusion of patients diagnosed with other defined genitourinary infections, this association was no longer observed.

There was no relation between symptoms and whether the growth of cervical or urethral group B streptococcus was reported as light, moderate, or heavy. Likewise, the number of genital sites from which the organism was identified was not associated with the presence of symptoms (table 2). However, in the nine cases who had high vaginal swabs taken, there was a significant association between heavy growth of GBS and the presence of symptoms.

DISCUSSION

The results of this retrospective case-control study suggest that the detection of GBS on routine clinical specimens in...
GBS received antimicrobial treatment in our clinic, often in the absence of symptoms, with no evidence of clinical benefit. Confusion and anxiety may also be generated by explanations given to the patient about the uncertain significance of this organism in the context of vulvovaginitis. The overall conclusion of this study is that the detection of GBS on routine clinical specimens taken in female GUM clinic attendees is not causally related to vulvovaginal symptoms; we recommend that patients should receive this advice and should not be treated with antibiotics for this indication.

Key messages

- Although isolation of group B streptococcus (GBS) on routine swabs taken from genitourinary medicine (GUM) clinic attendees is a relatively common finding, its significance is uncertain.
- This case-control study showed that the patients in whom GBS were detected on routine genital swabs were similar, in respect of their demographic, behavioural, and clinical characteristics, to other female GUM clinic attendees. Specifically, isolation of GBS from routine cervical or urethral swabs was not associated with vulvovaginal symptoms.
- We recommend that patients in whom GBS is isolated from routinely collected genital swabs should be advised that the organism is not causally related to vulvovaginal symptoms and they should not be treated with antibiotics for this indication.

CONTRIBUTORS

CS wrote the first draft of the paper, collected and contributed to analysis of all data and proposed the original idea for this study; MM provided laboratory data and contributed to interpretation of the laboratory findings; AS provided supervisory support at all stages of the study, assisted with data collection, analysed the data, and wrote the final draft of the pages.

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REFERENCES