Etiology of vaginal discharge in sexually inactive adolescents

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Vaginal discharge (VD) is common during puberty and may be physiological however it might also be the result of infection and other conditions.¹ The aim of this study was to determine the causes for VD in sexually inactive adolescents and to evaluate clinical and laboratory data which may assist in determining the etiology for infectious VD.

Material and Methods

The study took place at Hacettepe University, Department of Pediatrics, Division of Adolescent Medicine between September 2015 and March 2016. All sexually inactive pubertal patients with a complaint of VD were included. Clinical and laboratory data consisted of signs (perineal and vaginal hyperaemia) and symptoms (odor of discharge and perineal itching), vaginal pH, Gram stain and culture. In culture results, colonization was considered according to clinical findings as well as bacterial growth in culture. This retrospective analysis of patient records was approved by the Hacettepe Research Ethics Review Board (B.30.2.ANK.0.20.05.04-8772). Statistical analyses were performed using SPSS version 19.0 (Chicago, IL, USA). Descriptive statistics were used to summarize the participants' baseline characteristics. P values were calculated using the Chi square. A p value <0.05 was considered significant.

Results

Fifty-six sexually inactive pubertal patients between the ages of 10-18 years (mean age 14.6 ± 1.6 years) were included. Culture results revealed normal vaginal flora in 25 (44.6%), candida in 19 (33.9%; 11 *C. albicans*, 8 nonalbicans), bacterial vaginosis in 6 (10.7%; 3 *Gardnerella vaginalis*, 1 *Streptococcus agalactiae*, 1 *Klebsiella pneumoniae* and 1 *Klebsiella oxycota* + *Escherichia coli*) and Gram (-) colonization in 6 (10.7%). Gram staining revealed yeast in 10 (17.9%) patients but culture results were negative in terms of candida species in 4 (40%). The distribution of vaginal culture results was significantly different when evaluated according to vaginal pH (p=0.004; Fig. 1).



Fig. 1. Vaginal culture results according to pH

Discussion

In this study, physiologic leucorrhoea was the most common cause of VD in sexually inactive adolescents whereas the most common infectious causes of VD were candida and bacterial vaginosis with lower rates when compared to the literature.² Also, nonalbicans candida species were nearly as common as *C. albicans.*² The novel finding of this study was that infectious agents were more commonly *C. albicans* when vaginal pH was \leq 4.5 and nonalbicans candida when vaginal pH was 4.5-5.5 in sexually inactive pubertal girls. Also, bacterial colonization was detected only when the pH was 4.5-5.5.

In conclusion, we suggest that determination of vaginal pH, due to the fact that it is a non-invasive and inexpensive procedure, is important in predicting etiology of infectious VD in sexually inactive adolescents.

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