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RESEARCH ARTICLE

IS UROGENITAL ATROPHY CAN BE DIAGNOSED BY SYMPTOMS ONLY?

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ABSTRACT

Background: Atrophic vaginitis is inflammation of vagina due to thinning and shrinking of tissue as well as decrease lubrication due to estrogen deficiency. As estrogen level drops after menopause, the vaginal tissue become atrophic, leading to various urogenital symptoms.
Objective: To correlate clinical signs and symptoms with vaginal maturation value for diagnosis and assessment of severity.
Methods: In this prospective study,100 postmenopausal attending gynecology OPD in KGMU Lucknow, inquired for the symptoms of atrophic vaginitis, out of which 49 came out symptomatic and were included in study. Apart from detailed history and examination, vaginal maturation value (VMV) assessment was done.
Results: Symptoms of dryness, burning, perineal pressure, something coming out vagina and increase frequency of micturition were significantly more common in severe atrophic vaginitis. Dry vagina, shiny flat vaginal mucosa, narrow vaginal introitus and genital organ prolapse were significantly more common in severe atrophic vaginitis in comparison to mild atrophic vaginitis.
Conclusion: To conclude, severity of atrophic vaginitis can be assessed by signs and symptoms and treatment can be started on basis of symptomatology only.

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INTRODUCTION

Atrophic vaginitis (AV) is an inflammation of the vagina due to thinning and shrinking of tissues as well as decrease lubrication. Atrophic vaginitis is a common condition postmenopausal women experience due to estrogen deficiencies that cause involution of the vaginal tissue, leading to various urogenital symptoms (Bachmann, 2000). As estrogenlevel drops after menopause, the vaginal tissue become atrophic (i.e. thin, dry, shrunken). Vaginal secretions decline, making sexual activity painful. Urinary tract epithelium are also estrogen dependent, therefore urinary tract symptoms, may also emerge after menopause (Bachmann, 2000 and Carcio, 2002). Generally, the prevalence of vaginal atrophy has been reported to range from 7 %- 57% in healthy peri and post-menopausal women (Levine, 2008; Dennerstein, 2000). The "women voices in the menopause" undertaken web based survey in 2009 in 4246 women aged 55-65 years living in Sweden, Finland, UK,US, Canada and found 39% of the postmenopausal women had experienced vaginal atrophy, with the prevalence varying from 34% in Canada to 43% in Finland and the US (Rees, 2012). In atrophic vaginitis, genital symptoms include dryness, itching, burning, soreness,pressure, discharge, painful sexual intercourse in addition sores and cracks may occur. Urinary symptoms include painful micturition, hematuria, increase frequency of urination, incontinence and increase likelihood of infection (Bachmann, 2000). On examination, vagina is dry with pale frail tissue and lacking the normal mucosal ridges and folds. There is minimal lubrication due to decreased vaginal blood flow, and the tissues are easily traumatised with digital or pelvic examination. There may also petechiae or small haemorrhage on the vaginal lining. The vaginal introitus may be narrowed; the epithelial surface is typically very friable and may be ulcerated. Pelvic organ prolapse is also not uncommon (Osmers, 1990). Vaginal cytology by maturation value is an experience means to evaluate hormonal influence in women.Vaginal maturation value (VMV) is calculated from the ratio of superficial, intermediate and parabasal cells in vaginal smear has been used to detect vaginal atrophy and estrogen deficiency in post menopausal women (Meisels, 1967). Very few studies are

available on symptomatology of atrophic vaginitis and VMV, so in this study we had tried to correlate symptoms and signs of atrophic vaginitis with VMV.

MATERIALS AND METHODS

Present study was carried out in the department of obstetrics and gynecology, KGMU, Lucknow in correlation with department of pathology, KGMU, Lucknow during August 2009 to August 2010. Out of 100 postmenopausal were inquired for the symptoms of atrophic vaginitis, 49 came out symptomatic. Vaginal maturation value was done in all patients. Women with systemic diseases, having infection of vagina or malignancies of genital tract were excluded. Women on any type of hormonal therapy or vaginal surgeries involving more than 1/3rd of vagina were not included in study. Detail history and examination of patients was done after informed consent. Demographic characteristics and symptoms of atrophic vaginitis such as dryness, itching, burning, soreness, discharge P/V, dyspareunia, something coming out of vagina, increase frequency of micturition, burning micturition, painful micturition and incontinence were inquired. During local, per speculum and per vaginum examination, following signs are noted- dry vagina, itch marks, shiny flat vaginal mucosa, redness swelling ulcers, discharge per vagina,discharge per vaginum, narrow vaginal introitus, genital organ prolapse, urethral caruncle, petechial haemorrhage.

Cytology Evaluation: Cytological evaluation was performed by vaginal smear collected from lateral wall of mid third of vagina and mounted on a slide. Smear was immediately fixed in a alcohol ether dip for 1 hour and then stained with Papanicoloau stain. Each slide was evaluated in department of Pathology, KGMU Lucknow. In a total of 100 exfoliated vaginal cells, parabasal cells, intermediate cells, superficial cells were counted and results were expressed as the maturation value. Parabasal cell are small rounded cell with large nuclei comprising 50 – 70% of the total cell size. Intermediate cell have small nuclei with round cell. Superficial cells have smaller nuclei, rectangular cell membrane with abundant cytoplasm with nucleous comprising 10 – 20% of the cell. Superfecial cells, Intermediate cells and parabasal cells were assigned a point value of 1, 0.5 and 0 respectively. The number of cells in each category will be multiplied by point values and all three results will be added to arrive at a maturation value. A value of 0-49 indicate low estrogen effect. Value of 50 – 64 indicate moderate estrogen effect and value of 65 –100 indicate high estrogen effect[8]. All examination will be interpreted by same pathologist without prior knowledge of subject data.

Statistical Analysis: The statistical analysis was done using SPSS version 15.0 statistical analysis software. The values were represented in number (%), mean $\pm$ SD and p value.

Observations

In table 1 and 2, symptoms and signs of atrophic vaginitis had mentioned. Dryness (71.43%) was most common symptom followed by itching (65.31%) and burning (44.8%). Painful micturition was least common. Dry vagina (40.81%) and shiny flat vaginal mucosa (40.81%) were most common finding on examination. Symptoms of dryness, burning, perineal pressure, something coming out vagina and increase frequency of micturition were more common in severe atrophic vaginitis (VMV<49) which was also found to be statistically significant (Table 3). Dry vagina, shiny flat vaginal mucosa, narrow vaginal introitus and genital organ prolapse were more common in severe atrophic vaginitis among which dry vagina and shiny flat vaginal mucosawas statistically very significant and narrow vaginal introitus, genital organ prolapse was significantly more common in severe atrophic vaginitisas compared to mild atrophic vaginitis (Table 4).

Table 1. Symptomsof atrophic vaginitis present in post-menopausal women (n=49)

S. No	Symptoms	Number	Percentage
1	Dryness	35	71.43%
2	Itching	32	65.30%
3	Burning	22	44.89%
4	Soreness	14	28.57%
5	Perineal pressure	16	32.65%
6	Discharge P/V	9	18.36%
7	Painful micturation	11	22.45%
8	Something coming Out vagina	5	10.20%
9	Burning micturation	12	24.48%
10	Increase frequency of micturation	13	26.53%
11	Painful micturation	3	6.12%

Table 2. Signs of atrophic vaginitis present in post- menopausal women (n=49)

S. No.	Signs	Number	Percentage
1	Dry vagina	20	40.81%
2	Shiny flat vaginal mucosa	20	40.81%
3	Redness, swelling, ulceration	08	16.32%
4	Itch marks	02	4.08%
5	Discharge P/V	09	18.36%
6	Narrow vaginal introitus	06	12.24%
7	Genital organ proplapse	04	8.16%

Table 3. Correlation of symptoms and vmv

Symptoms	No.	%	No.	%	X^2	p
Dryness	13	100	22	61.1	7.078	0.008
Itching	10	76.9	22	61.1	1.054	0.305
Burning	10	76.9	12	33.3	7.335	0.007
Soreness	06	46.2	08	22.2	2.680	0.102
Perineal pressure	07	53.8	09	25.0	3.614	0.057
Discharge P/V	04	30.8	05	13.9	1.815	0.178
Painful intercourse	04	30.8	07	19.4	0.704	0.402
Something coming out vagina	04	30.8	01	2.8	8.167	0.004
Burning micturition	04	30.8	08	22.2	0.377	0.539
Increase frequency of micturition	07	53.8	06	16.7	6.773	0.009
Painful micturation	02	5.4	01	2.8	2.641	0.104

Table 4. Correlation of signs and vmv

Signs	No.	%	No.	%	X^2	P
Dry vagina	11	84.6	09	25.0	17.328	<0.001
Shiny flat vaginal mucosa	12	92.3	08	22.2	19.421	<0.001
Redness, swelling ulceration	02	15.4	06	16.7	0.011	0.915
Itch marks	01	7.7	01	2.8	0.589	0.443
Discharge P/V	02	15.4	07	19.4	0.105	0.746
Narrow vaginal introitus	04	30.8	02	5.6	5.651	0.017
Genital organ prolapse	03	23.1	01	2.8	5.250	0.022

DISCUSSION

Despite its high incidence, urogenital atrophy is an under-reported and under- diagnosed condition (Kelley, 2007). In our study, vaginal dryness was most common symptom (71.4%). Stenberg et al reported that 43.1% of women at age 61 years, experience vaginal dryness and 10% experience burning and also noted that 32% of women complaining of vaginal dryness, had lost interest in sexual relations (Stenberg, 1996). Bachmann et al also noted that vaginal dryness due to atrophic

vaginitis is known to present in up to 40% of post-menopausal women (Bachmann, 2000). Other large cohort studies have reported the prevalence of vaginal dryness in women from 27-55% (Stenberg, 1996 and Van Galen, 2000). Similarly a study done in Australia, they reported that only 3% of women of reproductive age are troubled by vaginal dryness and the incidence increases to 4% during the early menopausal transition, 21% in the late menopausal transition and 47% during the first 3 years of menopause (Dennerstein, 2000). In our study, dyspareunia was 22% while other studies noted 32-41% (Utian, 1994). According to some studies 40% of women with vaginal atrophy reports dyspareunia (Mac Bride, 2010; Levine, 2008; Dennerstein, 2000). Similar findings was found in the study done by Pinar Yoruk et al, in which vaginal dryness and pruritis were most common complaints after dyspareunia (Yoruk, 2006). In this study, UTI was found in 26.5%, while in other studies, incidence of UTI in postmenopausal women ranges from 4-15% (Foxman, 2004). In a self reported survey of urogenital symptoms among post-menopausal women aged 50-79 years, the prevalence rates of various symptoms of atrophic vaginitis had been found to be as followed: vaginal or genital dryness 27%, vaginal or genital irritation 18.6%, vaginal or genital discharge 11.1%, dysuria 5.2% (Pastore, 2004). In our study, symptoms of dryness, burning, perineal pressure, something coming out of vagina and increase frequency of micturition were associated with severe atrophic vaginitis. On examination, Dry vagina, shiny flat vaginal mucosa and narrow vaginal introitus were significantly present in severe atrophic vaginitis. So we should not take these symptoms lightly and undergo detail examination and VMV assessment if required, so that hormonal treatment can given and further complications could be prevented .Similar study done by Capewell et al on 120 post menopausal women, aimed to determine which clinical feature might best predict atrophy on the smear. In their study, they found a correlation among the degree of atrophy at vaginal cytology with physical thinness ($p<0.001$) and dryness on vaginal examination ($p<0.001$) (Capewell, 1992). Davila et al also tried to correlate the physical findings of urogenital atrophy with symptoms suggestive of atrophic vaginitis. They inquire 69 post- menopausal who came up for routine gynaecological care and developed a symptom and physical findings score (0-3) on basis of questionnaire and estimated vaginal maturation index (MI). They found symptom score were poorly correlated with physical findings but there was moderate correlation between physical finding and MI (Davila, 2003). Limitation of this study was mainly of sample size and study is from a single center and study population mostly belonged to lower socio-economic status and may not fully representative of entire population.

Conclusion

To conclude; in post menopausal women, we should not ignore symptoms of dryness, burning, UTI and thorough examine the patient and look for signs of atrophic vaginitis specially dry vagina and shiny flat vaginal mucosa. As atrophic vaginitis can not only diagnosed by symptomatology, even we can categorise the severity also. So that treatment can be started on basis of signs and symptoms only and if any doubt estimation of VMV can be done.

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