

Review

**Genito-Urinary Syndrome of Menopause (GUSM) - A Clinical entity
in need of recognition****Fernandopulle RC¹**

¹Senior Lecturer in Obstetrics & Gynaecology,
University of Sri Jayewardenepura, Sri Lanka

**Corresponding Author - Dr. Rukshan Fernan-
dopulle**

E mail – rukshancf@sltnet.lk

Introduction

Hypo-estrogenic state affecting the genito-urinary tissue leads to genito-urinary syndrome of menopause (GUSM). The implications of this syndrome, accounts to external genital, urological and sexual morbidity. It is estimated that over 50% of menopause women are affected by GUSM. Nevertheless, due to embarrassing symptoms many women refrain from divulging the disease burden to their physicians. A consensus was reached in 2014 by the North American Menopause Society and the International Society for the Study of Women's Sexual Health that GUSM is a more inclusive and an accurate term to describe the conglomeration of external genital, urological, and sexual sequelae caused by hypo-estrogenism during menopause.¹ It was agreed the term GUSM facilitates to enhance health seeking behavior of women tormented by the stigmatized symptomatology. The GUSM is an evolving health issue as global proportion of menopausal women is on the rise and women's awareness is created by peer groups. Furthermore, 15% of pre menopausal women also experience symptoms due to GUSM.²

Pathophysiological considerations

Embryonic development of female external genitalia, lower vagina, urethra and trigone of the urinary bladder share a common origin. Hence,

the genitalia and lower urinary tract processes a common oestrogen receptor function. Hypo oestrogen state has effects on both vulvo-vaginal and lower urinary tract region. During post menopausal period the number of oestrogen receptors decline significantly.² Endogenous and exogenous oestrogen enhances the number and quality of oestrogen receptors following menopause. The role of activated oestrogen receptors in the genito-urinary tract is to promote epithelial and smooth muscle proliferation. Lack of oestrogen leads to thinning of genito-urinary epithelium and rugae due to loss of smooth muscle proliferation, breakdown of collagen and elastin. Oestrogen is a vaso-active hormone that increases blood flow facilitating vaginal lubrication by transudation across vaginal epithelium and secretions from uterine cervix and Bartholin gland³. The resulting changes due to lack of oestrogen cause genital irritation and trauma during sexual intercourse. The epithelial lining of vagina and urethra is a stratified non-keratinized squamous epithelium comprising superficial intermediate and basal layers. Oestrogenized epithelial lining stores glycogen which is utilized by lactobacilli to produce lactic acid to maintain the vaginal pH around 4.5. The hypo-estrogenized urethra and vaginal epithelium is colonized by potential pathogens replacing the healthy vaginal flora leading to frequent UTI (Urinary Tract Infection) and vaginitis. Urinary incontinence and frequency in post-menopausal women is due to atrophy of the urethra and bladder. The role of oestrogen receptors in bladder trigone and urethra is to increase sensory threshold to withstand bladder distention without leading to urinary incontinence. Oestrogen deprivation associated with menopause weakens connective tissue in urethral sphincter tissue causing stress incontinence.

Clinical manifestations of GUSM

Clinical manifestations of GUSM are divided into



external genital, urological and sexual symptoms and signs⁴. A summary of symptoms and associated complications are given in table 1. Clinicians need to evaluate symptoms objectively to plan investigations and treatment. The correlation between disease burden and physical findings are poor. Standard digital and speculum examination if needed should be performed with caution as vaginal stenosis, shortening and inflammation brings immense discomfort. Dyspareunia secondary to dry vagina is a common complaint. In anticipation of pain during intercourse spasms of vaginal muscles occur as a physiological response.

Evaluation and Management Strategies

GUSM is a chronic condition needing long term management. Comprehensive history is of importance to exclude symptoms mimicking GUSM.

gen deprivation associated with GUSM. Vaginal pH shift towards 7, scarcity of lactobacilli, predominance of para-basal cells in vaginal smear and endometrial thickness less than 5mm support diagnosis of GUSM.

Life style modification to promote sexual intercourse has proven benefits to overcome symptoms of GUSM. Sexual intercourse enhances vaginal pliability, elasticity and the lubricative response due to promotion of vaginal musculature and epithelium⁶. Application of vaginal moisturizers and lubricants overcome vaginal dryness and itching during sexual intercourse as a temporary measure. The treatment of choice for GUSM symptoms is topical oestrogen therapy, with which quick reversal of oestrogen deprived changes in vaginal smear and shift of vaginal pH towards acidity is observed. Topical administration of oestrogen

TABLE 1
External genital, urological, and sexual manifestations of genitourinary syndrome of menopause

External genital		Urological		Sexual
Signs and symptoms	Complications	Signs and symptoms	Complications	Signs and symptoms
Vaginal/pelvic pain and pressure	Labial atrophy	Frequency	Ischemia of vesical trigone	Loss of libido
Dryness	Vulvar atrophy and lesions	Urgency	Meatal stenosis	Loss of arousal
Irritation/burning	Atrophy of Bartholin glands	Postvoid dribbling	Cystocele and rectocele	Lack of lubrication
Tenderness	Intravaginal retraction of urethra	Nocturia	Urethral prolapse	Dyspareunia
Pruritus vulvae	Alkaline pH (5–7)	Stress/urgency incontinence	Urethral atrophy	Dysorgasmia
Decreased turgor and elasticity	Reduced vaginal and cervical secretions	Dysuria	Retraction of urethral meatus inside vagina associated with vaginal voiding	Pelvic pain
Suprapubic pain	Pelvic organ prolapse	Hematuria	Uterine prolapse	Bleeding or spotting during intercourse
Leukorrhea	Vaginal vault prolapse	Recurrent urinary tract infection	Urethral polyp or caruncle	
Ecchymosis	Vaginal stenosis and shortening			
Erythema	Introital stenosis			
Thinning/graying pubic hair				
Thinning/pallor of vaginal epithelium				
Pale vaginal mucous membrane				
Fusion of labia minora				
Labial shrinking				
Leukoplakic patches on vaginal mucosa				
Presence of petechiae				
Fewer vaginal rugae				
Increased vaginal friability				

Gandhi. Genitourinary syndrome of menopause. Am J Obstet Gynecol 2016.

Local irritants, allergies, infections, valvular dystrophy and premalignant conditions give rise to symptoms similar to GUSM⁵. Cornerstone of evaluation is pelvic examination with paying more attention to inspection. Atrophic vulvo-vaginal epithelial surface is smooth and shiny with echymotic patches. Fusion of labial folds, narrowing of vaginal introitus are features of oestro-

gen deprivation associated with menopause. Vaginal oestrogen therapy trials have demonstrated relief of urinary symptoms such as frequency, urgency and stress incontinence⁷. The modalities available to locally deliver oestrogen are creams, vaginal tablets and rings. Systemic administration of oestrogen is effective in controlling symptoms of

GUSM but have unwanted effects like breast tenderness, weight gain and vaginal bleeding. Addition of a progestin to overcome unopposed oestrogen action too contributes to adverse effects. Systemic administration is suggested for relief from GUSM in women having hot flushes and in need of protection against osteoporosis⁸. The GUSM symptoms improve in 90% of individuals on topical oestrogen therapy and currently there is no evidence for periodical endometrial evaluation in asymptomatic women.⁹ The general consensus among clinicians is local application of oestrogen cream for a period of six months followed by a treatment free interval of few weeks.

Novel approaches in management of GUSM are gaining popularity as an alternative to traditional hormone replacement therapy. Selective oestrogen receptor modulator (SERM) Ospemifene was approved by FDA in 2013. It improves vulvo-vaginal atrophy and dyspareunia in candidates not suitable for oestrogen therapy. Laser therapy has been introduced to overcome symptoms of GUSM. The quality of atrophic vaginal epithelium is converted to more vascular, thickened, increased glycogen deposited healthy tissue. These changes on follow up lasted beyond 12 weeks. The application of intravaginal oxytocin gel and dehydroepiandrosterone at research level are found to be promising agents to promote vaginal epithelial layer without endometrial stimulation^{10,11}.

Risks and benefit of treatment options for GUSM should be discussed between the clinician and the patient to optimize the outcome.

References

1. Portman DJ, Gass ML, Vulvovaginal Atrophy Terminology Consensus Conference Panel. Genitourinary syndrome of menopause: new terminology for vulvovaginal atrophy from the International Society for the Study of Women's Sexual Health and the North American Menopause Society. *Menopause* 2014; **21**(10):1063-8.
2. Palacios S. Managing urogenital atrophy. *Maturitas* 2009; **63**(4):315-8.
3. Nappi RE, Palacios S. Impact of vulvovaginal atrophy on sexual health and quality of life at postmenopause. *Climacteric* 2014; **17**(1):3-9.
4. Gandhi J, Chen A, Dagur G, Suh Y, Smith N, Cali B, Khan S. Genitourinary syndrome of menopause: An overview of clinical manifestations, patho-physiology, etiology and management. *American Journal of Obstetrics & Gynecology* 2016; **215**(6),704-711, 2016
5. Goldstein I. Recognizing and treating urogenital atrophy in postmenopausal women. *Journal of Women's Health* 2010; **19**(3):425-32.
6. Rahn D, Carberry C, Sanses T, Mamik M, Ward R, Meriwether K, Olivera C, Abed H, Balk E, Murphy M. Vaginal Estrogen for Genitourinary Syndrome of Menopause. *Obstetrics & Gynecology* 2014; **124**(6):1147-1156.
7. Palacios S, Castelo-Branco C, Currie H, Mijatovic V, Nappi R, Simon J, Rees M. Update on management of genitourinary syndrome of menopause: A practical guide. *Maturitas* 2015; **82**(3):308-313.
8. Brockie J. Managing menopausal symptoms: hot flushes and night sweats. *Nursing Standard* 2013; **28**(12):48-53.
9. Castelo-Branco C, Cancelo M, Villero J, Nohales F, Juliá M. Management of post-menopausal vaginal atrophy and atrophic vaginitis. *Maturitas* 2005; **52**:46-52.
10. Al-Saqi S, Uvnäs-Moberg K, Jonasson A. Intravaginally applied oxytocin improves post-menopausal vaginal atrophy. *Post Reproductive Health* 2015; **21**(3):88-97.
11. Labrie F, Archer D, Koltun W, Vachon A, Young D, Frenette L, Portman D, Montesi M, Côté I, Parent J, Lavoie L, Beauregard A, Martel C, Vaillancourt M, Balser J, Moyneur É. Efficacy of intravaginal dehydroepiandrosterone (DHEA) on moderate to severe dyspareunia and vaginal dryness, symptoms of vulvovaginal atrophy, and of the genitourinary syndrome of menopause. *Menopause* 2016; **23**(3):243-256.