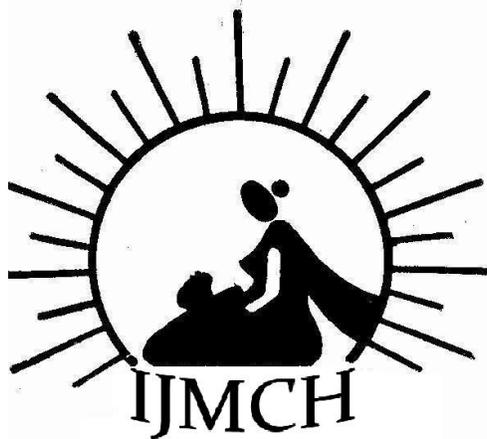


Comparison of efficacy of treatment in post-menopausal Urethral stenosis - Local application of estrogen creams alone versus urethral dilatation and estrogen creams

*Arvind Goyal*  
*Sunil Juneja*  
*Parminder Singh*

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## Comparison of efficacy of treatment in post-menopausal Urethral stenosis - Local application of estrogen creams alone versus urethral dilatation and estrogen creams

Arvind Goyal\*, Sunil Juneja\*\*, Parminder Singh<sup>+</sup>

Department of Urology \*, Deptt of Obst.&Gynaecology\*\*, Deptt of Endocrinology<sup>+</sup>  
Dayanand Medical College & Hospital, Ludhiana

**Correspondence:** Dr Arvind Goyal

**ABSTRACT:** The study was done to compare efficacy of treatment in post menopausal urethral stenosis i: e local application of estrogen creams alone versus urethral dilatation and estrogen creams. Comparison of severity and resolution of symptoms in patients treated by both methods was done. In patients with mild or moderate severity of symptoms faster and more effective relief was observed by urethral dilatation and/or cystoscopy as compared to local application of estrogen creams alone.

**INTRODUCTION:** Estrogen deprivation associated with menopause is the major cause of urogenital atrophy in menopausal women. Atrophic changes of the vagina, vulva, and urinary tract have a large impact on quality of life, with symptoms being progressive in nature and worsening with time. Common symptoms of urogenital atrophy include vaginal dryness, irritation, and itching; pain during sexual intercourse; and recurrent urinary tract infection (UTI) <sup>1</sup>. Urinary symptoms associated with urogenital atrophy are common—20% of noninstitutionalized elderly women experience bacteriuria and 12%-17% of postmenopausal women experience UTIs. <sup>2,3</sup>

Like other urogenital tissues, the mucosa of the urethra, the bladder, and the connective tissue surrounding the urethra are sensitive to estrogen. After menopause, the urethral mucosa atrophies and the collagen content in the connective tissue surrounding the urethra decreases. <sup>4</sup> Estrogen deficiency in the urinary tract also results in changes in vaginal pH. <sup>5</sup> In premenopausal women, estrogen maintains an acidic vaginal pH that prevents the growth of pathogenic bacteria. As estrogen declines, vaginal pH rises, increasing the likelihood of vaginal colonization by pathogens. <sup>5,6</sup> Blood flow in the urethra is also reduced. These changes predispose women to vaginal infections and recurrent UTIs caused by a variety of pathogens. <sup>4</sup>

Because estrogen deficiency is the underlying cause of urogenital atrophy, Estrogen therapy is a logical treatment strategy for women complaining of vulvovaginal and urinary symptoms. Both systemic and local estrogens produce significant improvements in symptoms due to urogenital atrophy. Vaginal formulations provide sufficient estrogen to reverse many atrophic changes; with limited systemic absorption. <sup>7</sup> Exhaustive literature is available for estrogen application for treatment of PMUS but not many studies are available for urethral dilatation / cystoscopy followed by estrogen application. So the present study

was planned to compare the results of both modalities from point of view of symptomatic relief to the patients.

**MATERIAL & METHODS:** The study was done between years 2008 to 2012 on post menopausal women patients reporting on outpatient basis in urology and gynecology. Their main presenting complaint was inability to urinate properly. Results were studied for 87 patients- 46 from gynecology outpatient and 41 from Urology.

The patients were asked questions about

- Obstructive Symptoms (Inability to pass urine properly):
  - Severity
  - Duration
  - Degree
- Associated complications
  - UTI
  - Hydronephrosis
  - Uremia
- Irritative Bladder Symptoms
  - Increased Frequency
  - Urgency/Urge Incontinence
- Latency period in improvement
- Degree of improvement
- Relief Duration before recurrence

**Investigations:** Urine Routine & Culture, Sr. creatinine and Ultrasound (Kidney and Bladder) were done to establish the severity of the problem and also to see the response to treatment.

Patients reporting to gynaec OPD with mild or moderate symptoms were treated with local applications of estrogens. Anticholinergic drugs were added in patients with persistent symptoms. Those with severe symptoms underwent dilatation under local anesthesia. Some patients with associated complications or retention urine were referred to Urology OPD.

Patients reporting to Urology OPD had more severe symptoms as such patients were referred from other departments. Those with mild or moderate symptoms underwent dilatation and/ or cystoscopy and those with severe symptoms underwent dilatation and/ or cystoscopy with catheterization. Local application of estrogens and anticholinergic drugs were added in all patients.

Patients were reassessed after initial treatment on weekly basis in both groups. Catheter was removed on first weekly followup or till resolving of complications. The symptom severity and reported complications were recorded and improvement in symptoms was clinically noted during each visit.

**RESULTS and DISCUSSION:** Out of 46 patients that presented with Ob/Gyn out patient, eight (17.4%) had severe symptoms with associated complications (**Table 1**). These patients were referred for Urology consultation. Of the remaining 38 (82.6%), with mild to moderate symptoms, complaints improved with local application of estrogen creams after period of two to three weeks. Estrogen plays a critical role in maintaining the structure and function of the female urogenital system, including the vulva, vagina, bladder, urethra, pelvic floor, and endopelvic fascia.<sup>6,8</sup> Urinary symptoms associated with urogenital atrophy include increased urgency and frequency, stress incontinence, and recurrent urinary tract infections (UTIs).<sup>7,9-11</sup> Some of the patients did have persistent symptoms and bladder muscle relaxant (anticholinergics) was added. 5 patients (10.9%) who did not have much relief from symptoms underwent dilatation. Symptoms were relieved in most of these patients. (**Table 2**)

**Table 1: Distribution of patients with respect to severity of symptoms**

Complaint Severity	Number of Patients		
	Total	Gynaec	Urology
Mild/Moderate	56(64.5)	38(82.6)	18(44)
Severe / Assoc. Complications	31(35.5)	8(17.4)	23(56)
	82	46	41

*Figures in parentheses indicate percentages*

**Table 2: Distribution of patients with respect to associated complications**

Associated Complications	No of patients		
	Total	Gynaec	Urology
Retention Urine	8(20.0)	2	6
Hydronephrosis	12(29.0)	2	10
Uremia	16(40.0)	3	13
Recurrent UTI	23(56.0)	9	14
Bladder Mucosa Trabeculation.	4(10.0)	1	3

*\* Total exceeds because of multiple complications in one patient*

*Figures in parentheses indicate percentages*

Treatment with a low-dose transvaginal estrogen has proved effective in relieving symptoms without causing significant proliferation of the vaginal epithelium.<sup>12-14</sup>

Out of 41 patients who reported to urology consulting, 18(44%) patients with mild to moderate symptoms underwent dilatation. They were prescribed anticholinergics and advised self-application of estrogen cream. (Table 3)

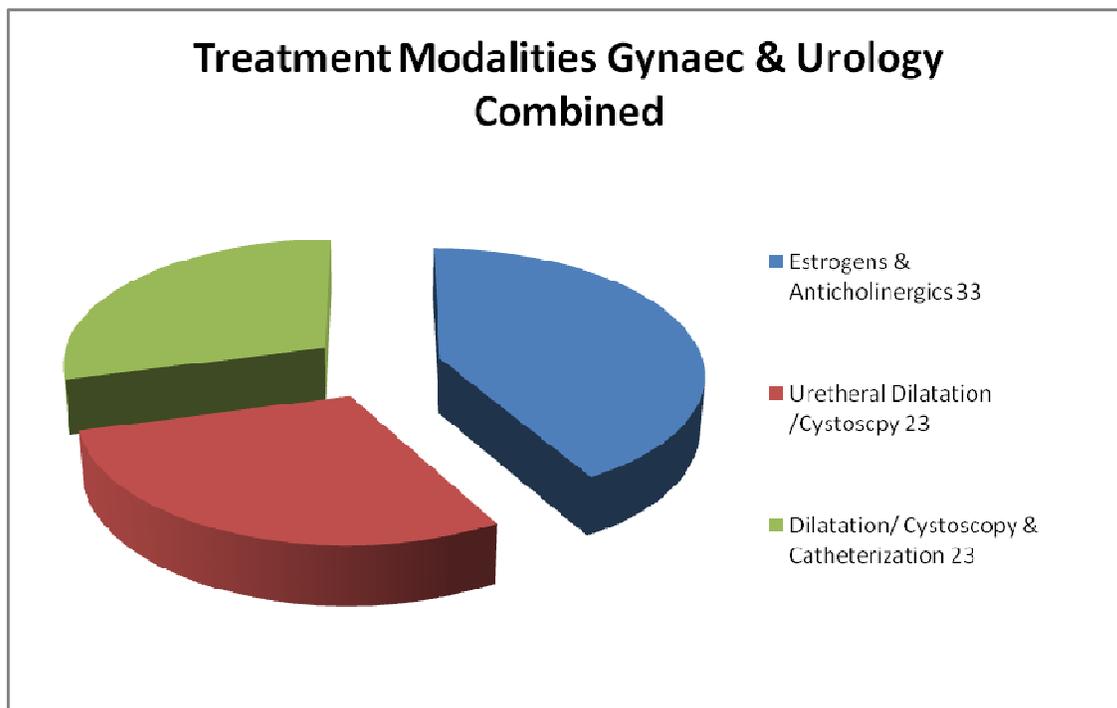
23(46%) patients presented with severe obstructive symptoms or retention urine (Table 2). Patients who had associated hydronephrosis (12 i.e 29%) or uremia (16 i.e 40%) improved gradually over time when urethral dilatation and /or cystoscopy followed by urethral catheterization. The deranged renal function improved. After urethral catheter was removed the patients continued with estrogen application locally. (Table 3)

Advantages of local ET include its limited systemic exposure, reduced risk of adverse effects compared with systemic formulations, and the ability to be administered without concomitant progestin therapy.<sup>11</sup> Local ET, compared with systemic ET, has a reduced risk of adverse effects such as breast and endometrial cancers and ischemic heart disease.<sup>15</sup>

**Table 3: Distribution of patients with respect to Treatment Modality**

Treatment Modality	Number of Patients		
	Total	Gynaec	Urology
Local Estrogen & Anticholinergics only	33	33(86.8)	---
Dilatation/Cystoscopy	23	5 (13.2)	18(43.9)
Dilatation/Cystoscopy with Catheterization	23	---	23(56.1)
	79	38	41

*Figures in parentheses indicate percentages*



In present study 33 out of 38 patients reporting to gynaec outpatient with mild symptoms improved after local application of estrogens and anticholinergic medicines. However the recovery is gradual and this treatment is not effective for severe symptoms and is reserved for patient with mild symptoms and no secondary effects. Clinically it was observed that 18 patients with mild to moderate symptoms who reported to urology consulting, and

underwent dilatation were relieved quicker as compared to non-surgical treatment indicating usefulness of intervention. This underlines dilatation/cystoscopy as a better modality of treatment.

As noted in results for 23 patients reporting to urologist, with severe degree of symptoms or acute retention, and those with associated hydronephrosis or uremia, urethral dilatation or cystoscopy was the only treatment of choice, followed by catheterization and self-local application of estrogen creams. This leads to relief from retention urine and improvement of renal functions.

#### **CONCLUSION & RECOMENDATIONS:**

Patients with mild to moderate symptoms in urology group improved faster with dilatation and application of estrogens than in gynaec group where only estrogen was applied. Hence urethral dilatation is recommended for post menopausal urethral stenosis.

However patients with severe symptoms or with associated complications as retention urine, hydronephrosis or uremia need to be catheterized after urethral dilatation and/ or cystoscopy. Patients also need to be prescribed anti cholinergics and local application of estrogen creams.

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