

Year: 2013 - Issue 1 [Obs/Gyne](#)

## The silent epidemic: Postmenopausal vaginal atrophy



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Postmenopausal hot flushes and night sweats will affect the quality of life of 25-75% of women and are well recognised and often treated by the medical profession. Atrophic symptoms affecting the vagina and lower urinary tract will also be experienced by a majority of women after the menopause causing itching, burning, and dyspareunia and sexual activity is often compromised. However only a minority will seek advice and fewer will receive helpful treatment. Some of this reluctance is due to the adverse publicity for hormone replacement therapy (HRT) in recent years, but regardless of whether these scares are justified, local treatment of vaginal atrophy is not associated with the possible risks of systemic HRT. Other reasons for the continued suffering in silence may be cultural and an understandable reluctance to discuss such matters, particularly with a male doctor, but the medical profession must take much of the blame for failing to enquire of all postmenopausal women about the possibility of vaginal atrophic symptoms.

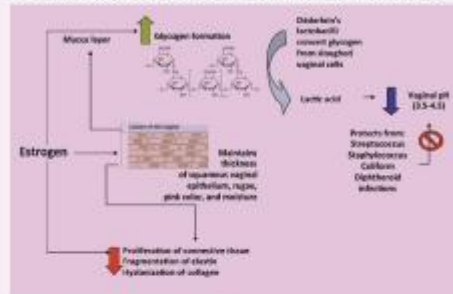
### INTRODUCTION

The female menopause and accompanying ovarian failure result in many changes affecting almost every organ system in the body. The urogenital tract is particularly sensitive to the decline in oestrogen and about half of all postmenopausal women will experience symptoms related to urogenital atrophy, affecting sexual function and quality-of-life.

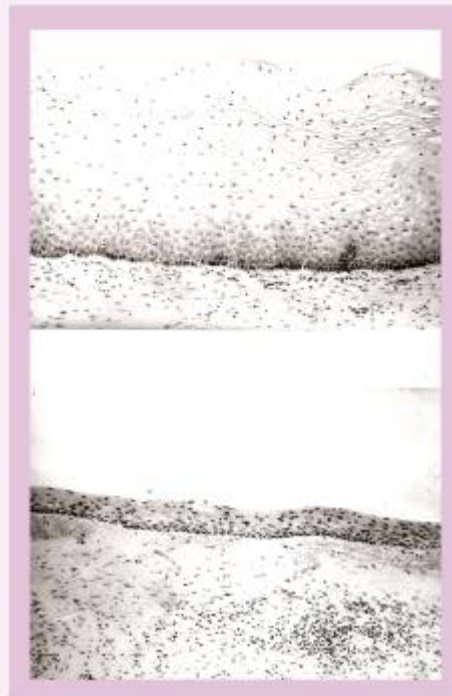
Vaginal atrophy becomes clinically apparent 4-5 years after the menopause and objective changes as well as subjective complaints are present in about 25-50% of all postmenopausal women.

### VAGINAL PHYSIOLOGY RELATED TO OESTROGEN DEFICIENCY

▼ **FIGURE 1:** Schematic depiction of the effects of oestrogen on the vaginal epithelium. Oestrogen promotes glycogen formation in the squamous epithelium. Döderlein's lactobacilli, part of the normal vaginal flora, depend on the glycogen as a source of fuel and convert the glycogen into lactic acid, thus keeping the vaginal pH acidic. The acidic pH helps to reduce infection. Oestrogen also maintains the thickness of the multi-layered squamous vaginal epithelium, which imparts its normal pink colour, rugae and moisture. Without oestrogen, connective tissue proliferation increases, elastin becomes fragmented, and collagen is subject to hyalinisation. Cartoon created from information reviewed by Ballagh and Bachmann and Nevadunsky. Reproduced with permission from Archer DF2.



▼ **FIGURE 2:** Histological preparations of vagina stained with hematoxylin and eosin (magnification X 10). Premenopause (top), the epithelium is well-oestrogenised, multi-layered with a good blood supply, and the superficial cells are rich in glycogen. Postmenopause (bottom), there is oestrogen-deficiency atrophy with marked thinning of the epithelium, the blood supply is reduced and there is loss of glycogen.



Figures 1 and 2

Serum oestradiol levels in the premenopausal woman range from 147-1468 pmol/l (40-400pg/ml) and fall to less than 73pmol/l(20pg/ml) postmenopause. This change in circulating levels is reflected in vaginal physiology and symptoms (*see figure 1*). Sexually active postmenopausal women are reported to have fewer symptoms and less physical evidence of vaginal atrophy. The loss of vaginal rugal folds and the thinning of the epithelium are due to the breakdown of the collagen support of the vaginal epithelium.

Dryness of the vagina occurs early in the postmenopausal period and is most apparent in sexually active women in whom it is associated with pain or dyspareunia. The vaginal pH in premenopausal

women is less than 4.5, which reflects the production of lactic acid by the lactobacilli. The pH increases to more than 6 in postmenopausal women due to the reduction of lactobacilli secondary to a decrease in superficial cells and glycogen. For these reasons the postmenopausal vagina is at risk of infections and inflammation, though the evidence for an increased incidence of infections is limited.

#### SEXUAL FUNCTION, HEALTH OF THE URINARY TRACT, QUALITY OF LIFE

Vaginal health plays a crucial role for sexual health, and oestrogen modulates the haemodynamic process involved in the sexual response cycle. In addition to dryness and dyspareunia, women with vaginal atrophy may report changes in genital sensation, reduced libido, poor arousal and orgasm and impaired sexual satisfaction. In addition the health of the urinary tract is strongly linked to with vaginal symptoms, especially in the absence of oestrogen. Urinary symptoms such as frequency, urgency, nocturia, dysuria, incontinence, and post-coital infection are more often reported when some vaginal atrophy is present.

Women experiencing sexual and urinary symptoms as a consequence of vaginal atrophy should be diagnosed and treated without delay in order to avoid a cascade of events, which do not resolve spontaneously. However, the experience of sexual symptoms is unique to each woman and is influenced not only by age and the menopause but also by a complex interplay of personal factors affecting the quality-of-life and the relationship of the couple.

#### GLOBAL VARIATIONS IN ATTITUDE TO VAGINAL ATROPHY

Most of the data on vaginal atrophy in the medical literature come from North America, Europe and Australia. A UK survey of women aged 55-85 years found that in response to a question on vaginal dryness, 42% of women did not seek treatment as it was not important, 36% sought non-prescription preparations, 13% considered it was 'something to put up with', and 10% were too embarrassed to discuss the problem with their doctors. In another survey of women's views and attitudes in seven countries from Scandinavia, UK and North America, mental and sexual well-being interfered with self-worth and enjoyment of life, as did vaginal discomfort.

In Arab countries and the Middle East cultural and religious taboos regarding sexual life and related issues inhibit many women from discussing vaginal dryness and sexuality issues with healthcare providers. When a postmenopausal woman attends a gynaecological clinic for some other complaint such as urinary incontinence or postmenopausal bleeding, the condition will often be diagnosed coincidentally. This is then the opportunity for a discussion about the issues of urogenital atrophy and vaginal health and the merits of local hormone treatment, though only women of medium/high socioeconomic class may be able to continue and maintain this relatively expensive treatment.

#### DIAGNOSIS

Since only a minority of women with symptoms due to vaginal atrophy will volunteer the information, and most women say that their healthcare professional only rarely or never asks about problems like vaginal dryness, it is all the more important that in every postmenopausal woman, whatever their presenting complaint, the possibility of symptomatic vaginal atrophy should be considered and appropriate questions asked. Many women will have limited or no knowledge of menopausal symptoms and the link between vaginal discomfort and declining oestrogen levels, and many will assume that it is an inevitable result of ageing. Delicate discussion and explanation may be required. Rarely are any tests necessary except to exclude infections or sometimes a vaginal pH can help.

Some non-menopausal conditions may be associated with oestrogen deficiency vaginal symptoms including long-term exclusive breastfeeding, therapy with a SERM (Selective Estrogen Receptor Modulator) or Aromatase Inhibitor and women with diabetes can experience diminished vaginal lubrication.

## TREATMENT

The rationale for treatment of vaginal atrophy is to restore urogenital physiology and to alleviate symptoms. Local vaginal moisturisers will relieve dryness during intercourse but have no long-term benefits. As the principle cause of this condition is oestrogen deficiency, the logical treatment is to give oestrogen therapy, which will thicken the epithelium, lower the pH, increase vaginal blood flow and lubrication. For women with menopausal symptoms such as hot flushes in addition to vaginal atrophy, the use of systemic HRT is appropriate and in about 75% of women, and both the vaginal and other symptoms will be relieved effectively. But several studies have shown that in at least 25% of women the vaginal atrophy does not respond satisfactorily and additional local treatment is then required. Systemic HRT may be associated with a small increased risk of breast cancer and stroke with long-term use when combined oestrogen and progestogen are used, which may limit acceptability. However, local oestrogen preparations are invariably effective and there is minimal systemic absorption and no evidence of endometrial stimulation when used at the appropriate dosages. Additional progestogen is not required therefore for endometrial protection. From all studies, there is no evidence of any increase in thromboembolic events or increase in metastases in breast cancer survivors using vaginal oestrogen.

There are many different local oestrogen preparations in the form of pessaries, tablets, rings and creams delivering the natural oestrogens oestradiol or oestrinol. All seem to be equally effective, though the tablets and rings are more user-friendly. Invariably, women will obtain substantial relief from their symptoms after about three weeks of treatment, although in some women with long standing atrophy it may require 4-6 weeks before adequate improvement is observed. There is a lack of data for the use of local oestrogen preparations beyond six months, even though it is well recognised that symptoms commonly return when treatment is discontinued. At present there is no reason why women with symptomatic vaginal atrophy cannot use low-dose local oestrogen therapy indefinitely, or for as long as they have symptoms. However, it is prudent to investigate fully all patients who present with any vaginal bleeding to exclude endometrial pathology.

## USE OF LOCAL OESTROGEN TREATMENT FOLLOWING BREAST AND GYNAECOLOGICAL CANCERS

The various treatments used for cancer can impact on sexual functioning and aromatase inhibitors can cause severe vaginal atrophy. Following breast and gynaecological cancers, 30-100% of women may have sexual dysfunction. While systemic oestrogen therapy is the most effective, this may be contraindicated, whereas non-hormonal vaginal moisturiser treatments and lubricants can be used during intercourse without limitation. Whether it is safe to use local oestrogen in women with hormone-sensitive cancers remains unanswered as there are no suitable studies on which to base policy. However, in women taking tamoxifen following breast cancer, there is very little concern that the use of local oestrogen may compromise the effects of tamoxifen, ®

but rather the efficacy of vaginal oestrogen may be compromised by tamoxifen. Aromatase inhibitors, which antagonise the production of oestrogen but not the binding with the oestrogen receptor, tend to cause more severe oestrogen-deficient symptoms than tamoxifen and thus a greater impact on

sexual function. So it is not clear if local oestrogens may be counter-productive and their use requires careful counselling and discussion with the oncology team.

#### NON-HORMONAL TREATMENTS

Lubricants are non-physiological and give temporary relief of dryness but often followed by irritation. Vaseline can break down the latex of condoms. Moisturisers are hydrophilic, insoluble cross-linked polymers, which are bio-adhesive. They attach to mucin and epithelial cells and retain water and also have a buffering effect on pH, but the effects are temporary and less than with local oestrogen. Other remedies that have been tried but lack sufficient supporting data include vitamins E and D and oral pilocarpine. Further data are required before any recommendation can be made regarding the use of herbal products for vaginal atrophy.

#### SUMMARY

Vaginal atrophy is one of the most important determinants of sexual function and urogenital health, with a significant impact on the quality-of-life. The symptoms of urogenital atrophy are variable and common. It is essential that healthcare professionals engage in open and sensitive discussion with postmenopausal women about their urogenital health to ensure that symptomatic atrophy is detected early and appropriately managed. Treatment should be started early and before irrevocable changes have occurred and needs to be continued to maintain the benefits. All local oestrogen preparations are effective and patient preference will usually determine the treatment used. Additional progestogen is not indicated when appropriate low-dose, local oestrogen is used, although long-term data (more than one year) are lacking. If oestrogen is ineffective or undesired, vaginal lubricants and moisturisers can relieve symptoms due to dryness.

#### FURTHER RESOURCES

The full recommendations from the International Menopause Society on which this article is based is available on the IMS website ([www.imsociety.org.uk](http://www.imsociety.org.uk)) as well as patient information leaflets in English, Arabic and four other languages that can be downloaded.

#### REFERENCES

References available on request ([magazine@informa.com](mailto:magazine@informa.com))