

POST MENOPAUSAL XEROSTOMIA

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Abstract: Menopause is a physiological activity in women which brings changes at both systemic and oral level. At old age, oral hygiene and oral health becomes a major problem and the dentist are the ones who find those changes in the body throughout the menopause. The gums and teeth are more prone to changes in hormones that take place before menopause and slows down body's capacity to fight back minor infections too. This article reviews about dry mouth during menopause which is of major concern which causes xerostomia.

Keywords: Menopause, post menopausal dry mouth, xerostomia, dry mouth, saliva, burning mouth, dental health, hormonal replacement therapy(HRT)

1. Introduction:

Menopause is a developmental stage in women's life which is normal and signifies the permanent and spontaneous cessation of menstruation for 12 consecutive months at the mean age of 45-55 years. As a woman approaches menopause, levels of the hormone estrogen start to decline. It results in clinical effects that affect the psychological status and quality of life of the individuals.

Menopause and Women:

Various phases of Women's life:

- Puberty
- Menstruation
- Pregnancy

- **Menopause**

Due to various hormonal changes during menopause, the gums become more vulnerable to bacteria and plaque resulting for risk of gingivitis and periodontitis^{1,2}. To prevent irreversible damage and to maintain good oral hygiene by removing tartar and plaque the tooth should be brushes minimum twice a day.

The most common pre and Post menopausal symptoms include³:

- Dry mouth(xerostomia)
- Painful sensation of mouth(PM)
- Burning mouth syndrome(BMS)
- Increase incidence of dental caries
- Dyesthesia
- Taste alterations
- Atrophic gingivitis
- Periodontitis
- Osteoporotic jaw

Female Sex hormones and oral mucosa:

Oral mucosa is directly affected by estrogen or through neural mechanism by altering the periodontal health in post menopausal women⁴. Xerostomia is more common in women than men⁵. Latest research shows that women with menopause exhibit various level of distress and anxiety depending on the etiology of xerostomia⁶.

Xerostomia and Saliva:

Defense mechanism of saliva prevents the formation of dental caries and reduced salivary secretion causes oral microbial colonization which affects the oral health⁷. Post menopausal women have low salivary flow rate that pre and menstruating women. Comparison between stimulated and un-stimulated salivary progesterone in menopausal women having oral dryness exhibits that persons with dry mouth have decreased un-stimulated salivary flow and salivary progesterone than those without dry mouth. Thus, there is a relationship occurs between salivary progesterone and oral dryness in menopause⁸. A study by Farzaneh et al. shows that salivary cortisol level in post menopausal women is in direct proportion with oral dryness⁹.

A study by Agha- Hossein et al, between lumbar spine bone mineral density(BMD) and oral dryness in 60 menopausal shows that there is negative correlation between xerostomia and BMD¹⁰.

Evaluation of 348 menopausal women by Yalcin et al exhibiting oral dryness shows oral dryness is higher in non HRT persons¹¹.

Management of Xerostomia in menopausal women:

Menopause hormonal therapy (MHT) or Hormonal replacement therapy(HRT) is the effective treatment for long term estrogen deficiency or xerostomia in menopausal women. A study by Volpe et al, by administrating conjugated estrogens to one group of post menopausal women with oral discomfort shows that 50% of subjects shows improvement with HRT¹². Although no effect of alendronate and calcium supplements was seen on salivary parameters, replacement of hormone along with alendronate and calcium seem to improve salivary flow rate in women with oral

dryness¹³.

Hormone Replacement therapy:

In HRT, Estrogens are administered orally, transdermally, percutaneously, intramuscularly, intranasally, subcutaneously, or locally (vaginally) with doses and timing specific to each individual. The recent application method is the metered-dose transdermal spray (EMDTS). Administration of oestrogens therapeutically results in removal of most of all climacteric symptoms. This is an effective strategy for the long-term prevention of estrogen deficiency as well as some other diseases¹⁴. Estrogens influences interleukin levels in women with periodontitis and accelerates healing in women on HRT¹⁵. The postmenopausal women with osteoporosis who did not receive HRT had higher incidence of adverse dental outcomes and leads to higher dental care costs than those who received HRT¹⁶.

Conditions and articles related to xerostomia:

ARTICLES	ORAL FINDINGS
Masler et al(1951)	93% of subjects with oral complaint of dry mouth signifying the prevalence of xerostomia
Kullander and Sonesson(1965)	Lower salivary secretion rate in menopausal women than menstruating women
Wardrop(1989)	43% subjects with dry mouth
Ship et al(1991)	No significant differences in salivary flow volume in pre menopausal women vs post menopausal women
Agha-Hosseini(2009)	Dry mouth is not the only cause for oral malodor seen in postmenopausal women
Mirzaii-Dizgah,Agha-Hosseini(2011)	negative correlation between the severity of dry miuth and the salivary concentration of 17-beta estradiol
Minicucci et al (2013)	Salivary progesterone level appears associated with oral dryness feeling in menopause

Side effects of HRT^{17,18}:

On use of estrogens,	On use of Gestagen,
Mastodynia	Depression
Fluid retention	Anxiety

Nausea	Flatulence
Lower extremities cramps	increased appetite
Headache	

Indications of MHT (Menopause Hormone Therapy):	Contraindications of MHT (Menopause Hormone Therapy) ¹⁹ :
Climacteric syndrome <ul style="list-style-type: none"> • Vasomotor problems • Psychic problems 	Breast carcinoma – current, in personal anamnesis, suspected
Estrogen-deficiency syndrome <ul style="list-style-type: none"> • Organic-urogenital atrophy • Metabolic -osteoporosis 	Estrogen-dependent malignant carcinoma – known or suspected
Prevention of, <ul style="list-style-type: none"> • Alzheimer’s disease and Parkinson’s disease and strengthening their treatment • senile macular degeneration and geriatric blindness • geriatric tooth loss and oral health • colorectal cancer 	Untreated estrogen-dependent carcinomas
	Active hepatopathy
	Anamnestic or current idiopathic thromboembolic disease Eg.pulmonary embolism, phlebothrombosis
	Active or recent arterial thromboembolism e.g. coronary thrombosis, angina pectoris

2. Conclusion:

Menopause affects women's oral health for the same reasons as far as the other body systems.

The proportion in which the role of sex hormones in maintaining the oral mucosa isn't clear. There is a requirement of randomized trials to assess the result of sex hormones on oral mucosal membrane, saliva and periodontal health. The use of Hormonal therapy in exaggerating oral symptoms is still controversial. There ought to be definite guidelines for menopausal women relating to good oral health and life style practise.

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