RESEARCH PAPER | Medical Science | Volume : 5 | Issue : 12 | December 2015 | ISSN - 2249-555X

Evaluation of the effect of post- menopause on dental health

KEYWORDS: Post menopause, Oral hygiene status, periodontal status.

Dr. Grishma Noronha	Prof (Dr). Mithra N Hegde
Senior lecturer Dept of conservative dentistry and endodontist ABSMIDS	Vice Dean/ Vice principal Dean of faculty of dental science Senior professor and Head of department Dept of conservative dentistry & Endodontics ABSMIDS

ABSTRACT

Objectives: This study is done to investigate the effect of menopause on saliva and dental health. Oral hygiene status was determined in regularly menstruating and post-menopausal women.

Materials and methods: The study was carried out on 50 healthy women patients who attended the out patient section of the Department of conservative dentistry and endodontics. Oral Hygiene Index (OHI) and Decayed, missing and filled teeth (DMFT) Index and periodontal status were determined clinically.

Results: The study demonstrated that OHI and DMFT was higher in post-menopausal women when compared to the control group. A significant decrease in periodontal health was also observed in post menopausal women.

Conclusion: There is a marked detoriation of periodontal health and also decrease in oral hygiene status in post menopausal women compared to healthy menstruating women .

INTRODUCTION:

It has been observed that life expectancy of women has increased significantly during the last decade, and most women spend one third of their lives after menopause. Menopause is a physiologic process which typically occurs in the 5th decade of life in women, and involves permanent cessation of menstruation. In women approaching menopause many physiological changes take place, most of which are due to decreased ovarian estrogen production. Estrogen deficiency may cause several problems such as hot flushes, sweating, osteoporosis, cardiovascular disease, cognitive disease, urogenital infections and skin changes.[1] Osteoporosis is of special interest in this regard. Currently the only thing that can be stated for certain is the fact that with decreasing mineralization of the osseous system pathological changes aggravate in the periodentium, however, published medical materials lack convincing data on correspondence between evident osteoporosis of the axial skeleton and the level of periodentium involvement. Oral discomfort including dry mouth, altered taste and burning sensation are also common chief complaints encountered in dental clinics.[2] The systemic changes occurring in menopause women could be the reason for the oral changes. The objectives of our study were to find the prevalence of oral symptoms in post-menopausal women compared to healthy menstruating women.

Materials and Methods:

The study was carried out on 50 healthy women patients who attended the out patients section of the Department of Conservative dentistry and Endodontics, A.B.Shetty memorial institute of dental science, Mangalore. From the fifty patients 28 patients consisted of regular menstruating healthy women and 22 patients consisted of healthy post-menopausal women. Patients who were diabetic, hypertensive, on any medications, pan chewers and completely edentulous were excluded from the study.

A questionnaire covering information on age, sex, systemic diseases, monthly menstruation and various oral symptoms was recorded for each individual participating in this study. Oral Hygiene Index (OHI) and Decayed, missing and filled teeth (DMFT Index), gingival and periodontal pocket and also loss of attachment status were determined clinically.

Statistical Analysis

Mann Whitney U test and Fishers exact test has been used to find the significance of the study parameters on continuous scale between two groups.

Results:

Gingival bleeding, periodontal pocket and loss of attachment were significantly higher in post-menopausal women when compared to healthy menstruating women.In menopausal women 67% had presence of gingival bleeding whereas 90.9% of subjects of post-menopausal women showed presence of gingival bleeding (Table 1). However there was no statistically significant difference between the age groups. In terms of number teeth around 25.4 teeth showed no gingival bleeding whereas only 22.7 teeth showed gingival bleeding. This difference was found to be significant. 89.3% of menopausal women were periodontally healthy whereas only 68.2% of post-menopausal women showed healthy periodontium. In the present study menstruating women showed complete absence of periodontal pocket above 6mm when compared to postmenopausal women (13.6%) though it was not significant (Table 1). In terms of loss of attachment a significant difference was observed.82.1% of menopausal women showed absence of loss of attachment compared to 54.5% in post-menopausal women. Around 27.5% of post menopausal women showed pocket 4-5 mm of pockets which was highly significant. In terms of sextant, on an average almost all six sextant were healthy in menopausal women whereas only five sextant were healthy in post menopausal women which was statistically significant. Higher rate of decayed missing and filled teeth were observed in post-menopausal women compared to menopausal women (Table 2). However no significant statistical difference was observed.

Volume : 5 | Issue : 12 | December 2015 | ISSN - 2249-555X

		Menstruating women	Post menopausal women	Total	p-value
Gingival Bleeding	Absence	9(32.1%)	2(9.1%)	11(22.0%)	0.1(NS)
	Present	19(57.9%)	20(90.9%)	39(78.0%)	
Periodontal pocket (Highest score)	Absent	25(89.3%)	15(68.2%)	40(80.0%)	0.07(NS)
	Pocket 4-5mm	3(10.7%)	4(18.2%)	7(14.0%)	
	Pocket 6mm or more	0	3(13.6%)	3(6.0%)	
LOA (Highest score)	0-3 mm	23(82.1%)	12(54.5%)	35(70.0%)	0.04*
	4-5mm	1(3.6%)	6(27.3%)	7(14.0%)	
	6- 8mm	4(14.3%)	4(18.2%)	8(16.0%)	
	>1	1(3.6%)	2(9.0%)	3(6.0%)	

Table 1: Comparison of Gingival bleeding, Periodontal pocket, Loss of attachment in menstruating and post menopausal women

Caries status	Study group	Number of teeth		Mann Whitney U test	
		Mean(SD)	Median(Q1-Q3)	U statistic	p-value
D	Menstruating women	3.57(2.28)	3(2-4)	266.00	0.406(NS)
	Post menopausal women	2.95(2.40)	3(0-5.25)		
M	Menstruating women	3.71(4.79)	2(0-5)	245.00	0.213(NS)
	Post menopausal women	5.00(6.03)	4(1.75-5)		
F	Menstruating women	1.54(1.77)	1(0-3)	259.00	0.322(NS)
	Post menopausal women	2.50(2.73)	2(0-4.25)		

Table 2: Comparison of Decayed (D), Missing (M) and Filled (F) teeth in Menstruating and Post menopausal women

Discussion

In the present study post-menopausal women showed higher percentage of periodontal disease and decayed, missing and filled teeth when compared to menopausal women. Juluri et al in his study noted that postmenopausal osteoporosis is associated with an increased incidence and severity of periodontal disease.[3] Periodontitis results from bacteria that elicit a host inflammatory response, which while being protective, may induce loss of alveolar bone as well as loss of collagenous support of the tooth. Osteoposrosis (OP)– A generalized rather than localized disease of bone loss, results in the loss of Bone mass density (BMD) in the maxilla and mandible and throughout the body as well. Hence, as a result, local reduction of BMD in the jaw may set the stage for the more significant loss of alveolar bone. The presence of bone resorbing factors could be expected to be an attributing factor to cause a greater loss of alveolar crest height than in a non-osteoporotic individual.[3] Other risk factors, such as diet, hormone levels smoking, diabetes, that affect the systemic bone loss may also contribute to periodontitis. This could be the reason for the significant increase of gingival bleeding and loss of attachment observed in the post-menopausal women.

Most significant oral symptom found in the menopausal women is oral dryness. Oral dryness might be due to undetermined qualitative changes in the salivary composition, an imbalance between the various salivary glands or changes in the mucosal sensory receptors.[4] Saliva plays an essential role in protecting oral tissues and preventing foreign materials from entering the body. Individuals with reduced salivary flow have shown higher incidence of dental caries, oral mucositis, dysphagia, oral infections and altered taste. [5] Laine and Virtanen examined the oral status of menopausal and non-menopausal women according to World Health Organization criteria and reported lower DMFT values in non-menopausal women.1Yalcin et al have reported lower DMFT values in menstruating women. Our study has also revealed that oral status of the postmenopausal women, as determined with DMFT, was worse than those of the menstruating women which could be due to changes oral symptoms which may result from endocrine disturbances, calcium and vitamin deficiency and various psychologic factors during menopausal years.[4] Ship et al. and Ben Aryeh et al., however, found the salivary flow rate did not significantly change during menopause.1Studies have demonstrated alterations in various salivary components, such as mucin, IgA, phosphates, alterations in salivary pH and electrical resistance have also been reported.[6,7] Our study showed significant reduction of salivary pH.7 But a significant periodontal health detoriation was observed in postmenopausal women compared to their DMFT status.

Conclusion

This study was undertaken to establish the effect of menopause on dental health. Our result showed increased OHI and DMFT indices and a significant increase in periodontal disease. An assumption can be made that the lower bone mineral density (postmenopausal osteoporosis and osteopenia) leads to changes in dental health with faster loss of teeth. Changes in salivary flow and composition may result in increased OHI and DMFT index. Therefore, importance of preventive dentistry should be increased with aging of women.

REFERENCE 1. Bhat. S, Hegde S, Bharthi, Sujatha D, Ganapathy.A study on evaluation of the effect of menopause on saliva and dental health. J. Adv Dental ResearchVoll : Issue I: October, 2010;1 : 33-36 2. Atrushkevitch V.G, Mkrtumyan A.M. Dental status of women in the post-menopause period. Gerontologija 2009; 10(3): 135–142. 3. Juluri. R,Prashanth E, Gopalakrishnan D, Kathariya R, Devanoorkar A Association of Postmenopausal Osteoporosis and Periodontal Disease: A Double-Blind Case-Control Study. Journal of International Oral Health 2015; 7(9):1-5. 4. Yalcin F, Gurgan S, Gurgan T. The effect of menopause, Hormone Replacement Therapy(HRT) Alendronate(ALN), and Calcium Supplements on saliva. J contemp Dent Pract2005;2;010-01 5. Olaolorun FM, Lawoyin TO. Experience of menopausal symptoms by women in an urban community in Ibadan, Nigeria. Menopause 2009;16:822-30 6. Ship JA, Patton LL, Tylenda CA. An assessment of salivary 13. function in healthy premenopausal and postmenopausal females. J Gerontol. 1991;46:11-5. 7. Ben Aryeh H, Gottlieb I, Ish Shalom S, David A, Szargel H, 25. Laufer D. Oral complaints related to menopause. Maturitas. 1996;24:185-9.