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Clinical Periodontal Profile in Pre-Eclampsia

Perfil Clínico Periodontal em Pré-Eclâmpsia

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RESUMO

Objetivo: Investigar a associação entre doença periodontal e pré-eclâmpsia.

Método: O estudo foi desenvolvido em 25 mulheres pré-eclâmpicas e em 25 mulheres grávidas normotensas, saudáveis. Avaliou-se alguns parâmetros clínicos e a perda dentária. Os dados foram analisados por meio do SPSS versão 7.

Results: A profundidade média da bolsa periodontal e perda dentária (características da doença periodontal) nas pacientes pré-eclâmpicas não foi estatisticamente significante quando comparadas as gestantes normotensas.

Conclusão: Este estudo mostrou que a doença periodontal durante a gravidez não está associada com o aumento no risco para o desenvolvimento de pré-eclâmpsia. A etiologia de ambas as patologias - pré-eclâmpsia e periodontite é multifatorial e deve-se ter cautela ao se relacionar a doença periodontal como causa da pré-eclâmpsia.

ABSTRACT

Objective: To investigate the association between periodontal disease and pre-eclampsia.

Methods: A method preliminary study was carried out on 25 pre-eclamptic women and 25 normotensive healthy, normotensive pregnant, women. The clinical parameters and missing teeth were determined. Data were analyzed by using SPSS version 7.

Results: The mean pocket depth and missing teeth (periodontal disease characteristics) for pre-eclampsia patients were not significant as compared those of normotensive.

Conclusion: The present study shows that maternal periodontal disease during pregnancy is not associated with increased risk for development of pre-eclampsia. The nature of both pre-eclampsia and periodontitis is multifactorial, and caution should be exercised when implicating periodontal disease in causation of pre-eclampsia.

DESCRIPTORES

Pré-Eclâmpsia; Periodontite; Perda de dente; Infecção focal.

KEYWORDS

Pre-Eclampsia; Periodontitis; Tooth Loss; Focal Infection.

INTRODUCTION

Preeclampsia is a common hypertensive disorder of pregnancy, affecting 5-10% of pregnancies and contributing significantly to maternal and perinatal morbidity and mortality. Periodontal disease being the most common chronic infectious disorders of infectious, with a reported prevalence varying between 10 and 60% in adults, periodontal disease is initiated by over growth of certain bacterial species with a majority of anaerobic, gram negative bacteria. Research evidences suggest association between periodontal disease and increased risk of systemic disease such as myocardial infraction, atherosclerosis, stroke, diabetic mellitus and adverse pregnancy outcomes¹⁻⁴.

The known risk factors for pre-eclampsia include primiparity null gravidity, obesity, renal disease, uterine malformation, fetal hydrops, elevated serum lipid ratio, chronic smoking, no prenatal care and diabetes⁵⁻⁷.

Pre-eclampsia and atherosclerosis share some common epidemiologic risk factors, also placental pathologic changes similar to atherosclerotic vascular changes have been described⁸⁻⁹.

The purpose of present study was to investigate the possible association between periodontal disease and pre-eclampsia, while controlling known risk factors for pre-eclampsia.

MATERIALS AND METHODS

A preliminary study with a selection of 25 pre-eclampsia and 25 normotensive healthy (aged 25-35 years) control women from Deptt. of Gynecology, Govt. Dental College, PGIMS, Rohtak. Women were diagnosed with pre-eclampsia if they had (1) blood pressure of > 140/110 at least 6 hours apart after 20 weeks of gestation and (2) proteinuria¹⁰.

History of endocrine disorders, uterine malformation, polycystic ovary syndrome, renal disease, collagen vascular disease, any cardiovascular disease, chronic hypertension, history of any antibiotic prophylaxis or medication, chronic smoking and chronic alcoholic excluded from study.

Periodontal parameter's such as pocket depth, clinical attachment and missing teeth were measured and examined. The presence of four or more teeth with one or more site with periodontal pocket depth > 4 mm and with a clinical attachment loss > 4 mm at some site, was

RESULTS

The mean pocket depth and missing teeth for pre-eclamptic patients were not significantly as compared with those of normotensive patients (Table 1).

Table 1. Mean + SD of periodontal parameter's such as [pocket depth (in mm)], and missing teeth in pre-eclampsia and normotensive control patients.

Groups	Pocket depth (in mm)	Missing teeth (in number)
Pre-eclamptic patient	4.5 + 1.2	2 + 1.6
Normotensive	4.5 + 1.9	2 + 1.3

DISCUSSION

Previous studies, have reported that maternal periodontal disease during pregnancy is associated with increased risk for the development of pre-eclampsia^{11,12}.

Whereas in the present study shows that maternal periodontal disease during pregnancy is not associated with an increased risk for development of pre-eclampsia. Pre-eclampsia should probably be regarded as a syndrome of heterogeneous origin⁷ and different factors have been postulated to be contributory, genetic, immune, obesity, hormone and race^{7,13}.

It has been reported that infection can be important in the pathogenesis of pre-eclampsia, both in terms of its initiation and / or its potential¹⁴. Factors other periodontal infection might be risk factor for pre-eclampsia in the subjects in the present study.

It has been recently studied that women were at higher risk for preeclampsia if they had severe periodontal disease at delivery¹³. Periodontal disease, a chronic oral gram negative infection, has been associated with atherosclerotic thromboembolic events and hypercholesterolemia^{14,15}. Periodontal disease may provide a chronic burden of endotoxin and inflammatory cytokines, which serve to initiate and exacerbate atherogenesis and thrombogenesis. It is possible that the placenta may be similarly burdened in pregnant women who develop preeclampsia. If the relationship between periodontal disease and preeclampsia risk proves causal in nature, then treatment of periodontal disease during pregnancy may represent a novel approach to the prevention of pre-eclampsia. There are some limitations to this study. The total sample size was not large enough

to extrapolate the results of this study to other settings in India or other parts of the world.

CONCLUSION

No significant association exists between periodontal disease and pre-eclampsia. The nature of both periodontitis and pre-eclampsia is multifactorial, and caution should be exercised when implicating periodontal disease in causation of pre-eclampsia. Additional studies, using same or different methodology in other populations are needed to corroborate those results.

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