

# Periodontal Profile in Preeclampsia: A Preliminary Study

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## Citation

B Rai. *Periodontal Profile in Preeclampsia: A Preliminary Study*. The Internet Journal of Dental Science. 2007 Volume 6 Number 1.

## 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 35 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 material 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.

## INTRODUCTION

Preeclampsia is a common hypertensive disorder of pregnancy, affecting 5-10% of pregnancies and contributing a 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 outcomes.<sup>1,2,3,4</sup>

The known risk factors for pre-eclampsia include primiparity nulligravidity, obesity, renal disease, uterine malformation, fetal hyotrops, elevated serum lipid ratio, chronic smoking, no prenatal care and diabetes.<sup>5,6,7</sup> Pre-eclampsia and atherosclerosis share some common epidemiologic risk factors, also placental pathologic changes similar to atherosclerotic vascular changes have been described.<sup>8,9</sup> 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 35 normotensive healthy (aged 25-35 years) control women from Deptt. of Gynacology, 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) proteinuria.<sup>10</sup>

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 diagnosed of periodontal disease. Data were analyzed using a SPSS version 7.0.

## RESULTS

**Figure 1**

Table 1: Mean  $\pm$  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 n=25	4.5 $\pm$ 1.2	2 $\pm$ 1.6
Normotensive n=25	4.5 $\pm$ 1.9	2 $\pm$ 1.3

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

### DISCUSSION AND CONCLUSION

Previous studies, have reported that maternal periodontal disease during pregnancy is associated with increased risk for the development of pre-eclampsia.<sup>11,12</sup>

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 origin,<sup>7</sup> and different factors have been postulated to be contributory, genetic, immune, obesity, hormone and race.<sup>7,13</sup> It has been reported that infection can be important in the pathogenesis of pre-eclampsia, both in terms of its initiation and / or its potential.<sup>14</sup> Factors than periodontal infection might be risk factor for pre-eclampsia in the subjects in the present study.

From this preliminary study, it can be concluded that 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.

### ACKNOWLEDGEMENT

I am very thankful to Dr. Simmi Kharb for critical review

my manuscript and Prof. Brig. S.C. Anand for giving me important and time to time guidance for this research.

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