



# V National Symposium, Italian Society of Oral Pathology and Medicine Ancona, 19-20 October 2018



## **Periodontitis and recurrent miscarriage: a case-control study of 41 women with medical history of recurrent miscarriage**

Morra Angela<sup>1</sup>, Palini Simone<sup>1</sup>, Aquilanti Luca<sup>1</sup>, Togni Lucrezia<sup>1</sup>, Montanari Luca<sup>1</sup>, Piemontese Matteo<sup>1</sup>

<sup>1</sup> Department of Clinical Specialistic and Dental Sciences, Marche Polytechnic University, Ancona, Italy.

### **INTRODUCTION.**

The interest in research for the correlations between periodontal and systemic diseases are motivated by the possibility of improving preventive and therapeutic interventions, in order to improve the overall state of individual health. Periodontitis and adverse pregnancy outcomes may be related by a chronic, systemic inflammation triggered in the mother and fetus, in response to pathogens of the maternal oral cavity. Many other studies are needed to clearly establish the existence of this relationship and the mechanisms by which it occurs. The aim of this work is to study the connection between periodontitis and recurrent miscarriage.

### **MATERIAL & METHODS.**

The study was conducted on patients from the Clinic of Obstetrics and Gynecology, Marche Polytechnic University, “G. Salesi” Hospital, Ancona, from 2006 to 2010. Out of 60 women, 41 (mean age 36.0 years) with recurrent miscarriage clinical history were enrolled. The controls were 44 women of the same age range who had not presented a history of recurrent miscarriage. Clinical evaluation parameters for periodontal health status considered were: Probing Depth (PD), Clinical Attack Level (CAL), Bleeding on Probing (BoP), Plaque Index (PI), Gingival Index (GI).

### **RESULTS.**

The age of the test group ranged from 27 to 44, with a mean age of 36.0. The mean age of the controls group was 35.2. The statistical analysis of the data proved that the age of patients had a normal distribution and there were no significant differences between ages. All participant declared they did not smoke, consume alcohol or drugs before, during and after pregnancy. Furthermore, there were no significant differences between the two groups regarding ethnicity and socio-economic status. There was a statistically significant difference in PI (median: 41% cases, 37% controls), BoP (mean: 55% cases, 19% controls) and GI (mean: 1.27 cases, 0.56 controls). A significant but weak relationship between poor periodontal health and miscarriage was found in our sample. The statistical analyzes have shown that the most important periodontal factors associated with pregnancy outcomes are BoP and PD.

### **CONCLUSIONS.**

If a periodontal disease is diagnosed, pregnant women should be informed that the risks of no treatment are significantly higher than the minimal trauma that might occur during therapy. Global inflammatory load of periodontitis, associated with hormonal changes in pregnancy, is an additional risk factor in the pathogenesis of recurrent miscarriage. Pregnant women should also be aware that periodontal treatment should be avoided in the first trimester and should be performed preferably during the second trimester. Who plans to become pregnant should undergo periodontal treatment before conception.

### **REFERENCES.**

1. Loe H, Silness J, Periodontal Disease in Pregnancy: Prevalence and Severity. *Acta Odontol Scand* 1963 DEC; 21:533-51.
2. Pitiphat W, Joshipura KJ, Rich-Edwards JW, Williams PL, Douglass CW, Gillman MW. Periodontitis and plasma C-reactive protein during pregnancy. *J Periodontol.* 2006 May;77(5):821-5.

	Controls	Cases	P Value
	N=44	N=40	
Age (Mean)	35.25	36.05	0.731
Ethnic Group, %			0.763
White	75.2	80.8	
Black	19.1	16.0	
Other	5.7	3.2	
Socio-Economic Group			0.336
I/II	43.0	31.1	
III/IV/V	37.6	45.9	
Other	19.4	23.0	
Pregnant Smokers (%)	15.9	0	0.004
Ex-Smokers (%)	39.3	17.2	0.002
Urinary Infections during Pregnancy (%)	18.3	23.0	0.306
Antibiotics during Pregnancy	28.0	52.5	0.002

Table 1 - Demographic and Pregnancy Variables: Control Vs Cases

	Controls	Cases	P Value
	N=44	N=41	
Number of teeth (%)	28 (27-30) <sup>1</sup>	28 (26-29)	0.146
Plaque Index	37 (48-64)	41 (26-71)	0.786
Mean PD, mm/site	2.20 (1.88-2.46)	2.27 (2.02-2.52)	0.100
Mean CAL, mm/site	0.36 (0.21-0.55)	0.43 (0.23-0.58)	0.659
Mean GI	0.56 (0.1-1.2)	1.27 (0.5-2.4)	0.007
Sites with BoP (%)	19 (8-36)	55 (9-89)	0.001
Sites with PD≥4mm (%)	8 (2-14)	11 (5-17)	0.074
Sites with PD≥5mm (%)	2 (0-5)	4 (0-7)	0.016
Sites with CAL≥2mm (%)	5 (2-13)	7 (2-13)	0.533
Sites with CAL≥3mm (%)	2 (0-4)	2 (0-6)	0.951

Table 2 - Periodontal Variables: Controls Vs Cases