COVER PAGE

Date- 04-12-2015. ETHICAL APPROVAL.

Study Title-

Comparative clinical evaluation of coronally advanced flap with platelet-rich fibrin membrane and chorion membrane in the treatment of human gingival recession

MAHATMA JYOTIBA PHULE ROHILKHAND UNIVERSITY, BAREILLY

"COMPARATIVE CLINICAL EVALUATION OF CORONALLY ADVANCED FLAP WITH PLATELET RICH FIBRIN MEMBRANE OR CHORION MEMBRANE IN THE TREATMENT OF HUMAN GINGIVAL RECESSION"

BY

Dr. BIMMI TRIPATHI

Dissertation Submitted to the
Mahatma Jyotiba Phule Rohilkhand University, Bareilly
In partial fulfillment of the requirements for the degree of

MASTER OF DENTAL SURGERY

In

PERIODONTOLOGY AND IMPLANTOLOGY

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Under the Guidance of
Dr. JAISHREE GARG
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ETHICAL CLEARANCE CERTIFICATE

To

Dr. Bimmi Tripathi

Post Graduate Student

Department of Periodontology

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Bareilly-2430306,

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The Institutional Ethical Committee, Institute of Dental Sciences, Bareilly (IDS) has reviewed and discussed your application to conduct the **"Interventional Clinical Trial"** in the Department of Periodontology, IDS. Your proposal now deemed to meet the requirements of the Institutional Ethical guidelines.

Approval No.	IDS/ETHCC/14/08
Research Title	Comparative clinical evaluation of coronally advanced flap with platelet rich fibrin membrane and chorion membrane in the treatment of human gingival recession.
Approval Date	04 December 2015
Decision	Approved

Conditions of this approval:
1) The conduct of research should be strictly in accordance with the approved proposal.
2) Report Serious Adverse Event or any other issues related to the research project immediately to the IEC- IDS.

Prof. (Dr.) Sathyajith Naik N.
Principal

Prof. (Dr.) Sathyajith Naik N.
MDS
Principal
Institute of Dental Sciences, Bareilly

ABSTRACT

Background: Platelet-rich fibrin (PRF) is a second-generation platelet concentrate and has the potential to accelerate soft and hard tissue regeneration. The chorion membrane is a fetal tissue. It has been used for its exceptional wound-modulating properties. The aim of the present study was to evaluate and compare the clinical outcome of PRF and chorion membrane in the treatment of isolated Miller's class I or II gingival recession defects.

Materials and methods: A total of 50 recession defects were treated randomly with coronally advanced flap (CAF) along with PRF membrane (site A, n = 25 defects) or CAF with chorion membrane (site B, n = 25 defects). Clinical parameters measured at baseline, 1 month, 3 months and 6 months were recession depth (RD), recession width (RW), clinical attachment level (CAL), width of keratinised gingiva (WKG), plaque index (PI), gingival index (GI) and assessment of gingival biotype. Statistical analysis was performed to compare the treatment outcomes at the follow-up intervals.

Results: Six months after the surgery, statistically significant improvements in mean root coverage, RD, RW, CAL, WKT, PI and GI were observed in both groups. No statistically significant difference was found between the two groups for all of these parameters. The mean percentage of root coverage was 86.76 ± 13.76 in the PRF group (site A) and 82.89 ± 15.65 in the chorion group (site B) at six months post-operatively, with no statistically significant difference between them. The gingival biotype also showed a thick biotype in sites that had an initial thin biotype.

Conclusion: Both PRF and chorion membrane are adequate and predictable treatment modalities for the management of isolated recessed-type defects. Longitudinal studies are needed to confirm these findings.

Keywords: Coronally advanced flap, gingival recession defect, platelet-rich fibrin, root coverage, chorion membrane.

Statistical Analysis

Statistical analysis of the data was done using the statistical package for the social science (SPSS 22.0). The data was compiled using Microsoft excel sheet (windows 2007). For each variable the mean and standard deviation were calculated. The differences between the means were calculated using the Student's paired and independent t-test. $p < 0.05$ was considered statistically significant.

Student's t-test:

When sample size is small, 't' test is used to test the hypothesis. This test was designed by **W. S. Gossett**, whose pen name was **'Student'**. Hence this test is also called 'Student's t-test'.

t = ratio of observed difference between two means of small samples to the standard error of difference in the same.

It is applied to find the significance of difference between two proportions as,

1. Unpaired 't' test
2. Paired 't' test

Criteria for applying 't' test,

1. The sample must be randomly selected.
2. The data must be quantitative.
3. The variable is assumed to follow a normal distribution in the population.
4. Sample should be less than 30.

Unpaired (independent) 't' test:

This test is applied to unpaired data of independent observations made on individuals of two different or separate groups or samples drawn from two populations, to test if the difference between the means is real or it can be attributed to sampling variability.

Steps:

1. As per the null hypothesis, assume that there is no real difference between the means of two samples.
2. Find the observed difference between means of two samples $(\overline{X_1} - \overline{X_2})$
3. Calculate the standard error of difference between the two means.

$$SE = \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}$$

4. Calculate the 't' value

$$t = \frac{X_1^2 - X_2^2}{SE}$$

5. Determine the pooled degrees of freedom from the formula

   $d.f. = (n_1 - 1) + (n_2 - 1) = n_1 + n_2 - 2$

6. Compare calculated value with the table value (table of 't') at particular degrees of freedom to find the level of significance.

Paired "t" test:

It is applied to paired data of independent observations from one sample only when each individual gives a pair of observations.

Steps:

1. As per the null hypothesis, assume that there is no real difference between the means of two samples.
2. Find the difference in each set of paired observations before and after ($X_1 - X_2 = X$)
3. Calculate the mean of the differences $(\overline{X})$
4. Work out the standard error of mean, SE = SD/ $\sqrt{n}$
5. Determine 't' value

$$\text{'t'} = \frac{\overline{X}}{\text{Standard error of difference}}$$

6. Find the degrees of freedom (n – 1)
7. Refer 't' table and find the probability of 't' corresponding to n- 1 degree of freedom.
8. If the probability is more than 0.05, the difference observed has no significance, because it can be due to chance.

ANNEXURE – II

INFORMED CONSENT

Subject: _____

I, Mr./Mrs./Ms. _____, hereby state that my doctor has provided me with complete details about the proposed procedure/treatment. I have been informed about the purpose of the procedure and the possible risks/complications involved.

“I hereby declare that I am fully agreeing, of my own free will, to undergo this procedure/treatment for its successful completion.”

Patient’s Signature: _____

ANNEXURE – III

DEPARTMENT OF PERIODONTICS & IMPLANTOLOGY

INSTITUTE OF DENTAL SCIENCES, BAREILLY (UP)

PROFORMA FOR DISSERTATION

Name:	O.P.D. No:	Date:
Address:	Occupation:	Age:
		Sex:

CHIEF COMPLAINT:

PRESENT DENTAL HISTORY:

PAST DENTAL HISTORY:

PAST MEDICAL HISTORY:

PERSONAL HISTORY:

ORAL HYGIENE HABITS:

EXAMINATION:

GINGIVA:

GINGIVAL WIDTH:

GINGIVAL THICKNESS:

RECESSION WIDTH:

RECESSION DEPTH:

CLINICAL ATTACHMENT LEVEL:

% OF ROOT COVERAGE: (baseline RD - RD at 1, 3 or 6 months)/baseline RD.

INDICES:

Plaque index (PI): (Silness & Löe, 1967)

17	16	15	14	13	12	11	21	22	23	24	25	26	27
47	46	45	44	43	42	41	31	32	33	34	35	36	37

Plaque score per tooth =Sum of plaque score on all four surfaces / 4
Total plaque score for a person = Plaque score per tooth / number of teeth examined

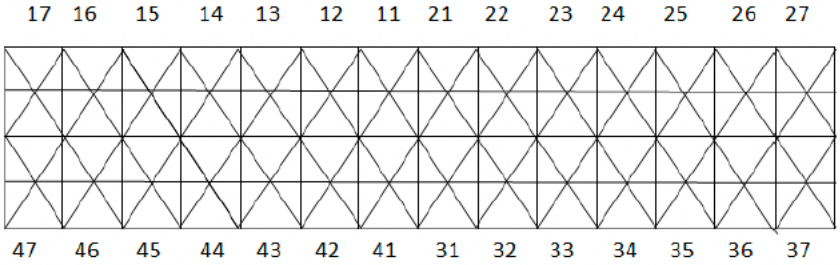
Gingival Index (GI) : (Löe and Silness, 1963)

17	16	15	14	13	12	11	21	22	23	24	25	26	27
47	46	45	44	43	42	41	31	32	33	34	35	36	37

GI Score for the tooth = sum of 4 areas of tooth / 4

GI Score for the individual = total indices for each tooth / total no. of teeth examined

Clinical Attachment Level (CAL):



PROVISIONAL DIAGNOSIS:-

PROGNOSIS:-

OVER ALL:-

INDIVIDUAL:-

INVESTIGATIONS:-

FINAL DIAGNOSIS:-

TREATMENT PLAN:-

CASE SUMMARY: