

# Plasma rich in growth factor in gingival recession coverage

|                                        |                                                   |                                                                                                                         |
|----------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>Submission date</b><br>22/09/2026   | <b>Recruitment status</b><br>No longer recruiting | <input type="checkbox"/> Prospectively registered<br><input type="checkbox"/> Protocol                                  |
| <b>Registration date</b><br>25/09/2026 | <b>Overall study status</b><br>Completed          | <input type="checkbox"/> Statistical analysis plan<br><input type="checkbox"/> Results                                  |
| <b>Last Edited</b><br>25/09/2026       | <b>Condition category</b><br>Oral Health          | <input type="checkbox"/> Individual participant data<br><input checked="" type="checkbox"/> Record updated in last year |

**Plain English summary of protocol**  
Not provided at time of registration

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**Additional identifiers****Study information****Scientific Title**

Effect of plasma rich in growth factor with bridge flap in management of Miller's class I and II gingival recession defects

**Study objectives**

The purpose of the present clinical study was to compare the clinical efficacy of DLSBF with and without PRGF for the management of gingival recession in the mandibular anterior teeth.

**Ethics approval required**

Ethics approval required

**Ethics approval(s)**

Approved 22/10/2020, Institutional Ethical Committee-Institute of Medical Sciences (IMS) and SUM Hospital (K8, Kalinga Nagar, Shampur, Bhubaneswar, 751003, India; +916742386281; iec-ims@soa.ac.in), ref: DRI/IMS\_SH/SOA/18122/2020

**Primary study design**

Interventional

**Allocation**

Randomized controlled trial

**Masking**

Blinded (masking used)

**Control**

Active

## **Assignment**

Parallel

## **Purpose**

Treatment

## **Study type(s)**

## **Health condition(s) or problem(s) studied**

Surgical management of Miller's class I and II gingival recession defects

## **Interventions**

### **Treatment Groups**

The patients with multiple recession defects were randomly assigned, using block randomization in 1:1 allocation ratio employing computer generated sequence, to be recruited in both groups:

1. Double lateral sliding bridge flap (DLSBF) combined with plasma rich in growth factors (PRGF) group (n = 50 sites in 15 patients)
2. DLSBF alone group (n = 45 sites in 15 patients)

### **PRGF Preparation**

Venous blood (10 mL) was collected in 3.8% sodium citrate tubes and centrifuged using the PRGF-Endoret® System V (BTI Biotechnology Institute, Vitoria-Gasteiz, Spain) at  $580 \times g$  for 8 minutes. Fraction 2 (F2), comprising approximately 2 mL of plasma immediately above the buffy coat, was used clinically and activated with 10% calcium chloride (0.2 mL) immediately before application.

### **Surgical Procedure**

Following local anesthesia, recession defects in both groups were treated using the DLSBF technique, combining modified Edlan-Mejchar vestibuloplasty with coronally advanced flap principles. A partial-thickness flap was prepared, the papillae were de-epithelialized, and the flap was mobilized to permit tension-free coronal advancement. After root planing, exposed root surfaces were conditioned with 24% EDTA. In the test group, activated PRGF was applied over the conditioned root surface before flap advancement. The flap was stabilized coronally using 6-0 Vicryl sutures, followed by placement of a periodontal dressing.

### **Follow-up and Outcome Assessment**

Postoperative pain was recorded on Days 1, 3, 7, and 10, while swelling and bleeding were evaluated on Days 3, 7, and 10. Clinical periodontal parameters were reassessed at 3 and 6 months by a blinded examiner using the standardized measurement protocol.

## **Intervention Type**

Procedure/Surgery

## **Primary outcome(s)**

1. Relative attachment level measured using a UNC 15 periodontal probe from Lower margin of a customized stent up to the base of the gingival sulcus/ pocket (in mm) at baseline, 3 and 6 months
2. Width of keratinized gingiva measured using a UNC 15 periodontal probe from crest of the gingival margin to muco-gingival junctionat (in mm) at baseline, 3 and 6 months

**Key secondary outcome(s)**

1. Gingival recession depth measured using a UNC 15 periodontal probe from cemento-enamel junction to marginal tissue recession (in mm) at baseline, 3 and 6 months
2. Gingival recession width measured using a UNC 15 periodontal probe estimating mesio-distal dimension of gingival recession at the level of cemento-enamel junction (in mm) at baseline, 3 and 6 months
3. Percentage of root coverage measured using the division of the amount of root covered during healing by the original recession depth, then multiplying by 100 (in percentage), at baseline, 3 and 6 months
4. Gingival thickness measured using an endodontic file with stopper and caliper (in mm) at baseline, 3 and 6 months
5. Patient reported outcomes (swelling, bleeding and pain) measured using a Visual Analogue Scale (VAS) at Day 1 to Day 7
6. Probing depth measured using a UNC 15 periodontal probe from crest of the gingival margin to gingival sulcus/pocket (in mm) at baseline, 3 and 6 months

**Completion date**

30/06/2023

**Eligibility****Key inclusion criteria**

1. Patients aged 20–45 years
2. Presence of at least two Miller's Class I or II gingival recession defects in the mandibular anterior sextant
3. Systemically healthy individuals
4. Good oral hygiene with Plaque Index (PI) <1.5 and Oral Hygiene Index (OHI) score <1

**Healthy volunteers allowed**

Yes

**Age group**

Adult

**Lower age limit**

20 Years

**Upper age limit**

45 Years

**Sex**

All

**Total final enrolment**

30

## Key exclusion criteria

1. Previous periodontal surgery at the study site
2. Antibiotics taken within the last 3 months
3. Patients having cervical restorations or root caries
4. Tobacco smoking or smokeless tobacco use
5. Systemic diseases such as diabetes mellitus or hypertension
6. Medications associated with gingival enlargement
7. Presence of trauma from occlusion

## Date of first enrolment

01/11/2020

## Date of final enrolment

31/12/2022

## Locations

### Countries of recruitment

India

## Sponsor information

### Organisation

Siksha O Anusandhan University

### ROR

<https://ror.org/056ep7w45>

## Funder(s)

### Funder type

### Funder Name

Siksha O Anusandhan University

## Results and Publications

### Individual participant data (IPD) sharing plan

### IPD sharing plan summary

Not expected to be made available

**Study outputs**

| Output type                                   | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|-----------------------------------------------|---------|--------------|------------|----------------|-----------------|
| <a href="#">Participant information sheet</a> |         |              | 22/09/2026 | No             | Yes             |