

**Table 3.** Implant survival and failure in relation to ISQ value at implant placement and after initial healing.**Implant survival, sub-analysis**

Variable	Groups	Implants placed	Implants survived	Implants failed	CSR (%)	Odds ratio	95% C.I.	p-value
ISQ at insertion	< 60	39	37	2	94.9	3.6	0.4–15.9	0.13 <sup>(1)</sup>
	≥ 60	1213	1195	18	98.5			
ISQ at loading	< 60	31	15	16	48.4	308.6	87.7–	< 0.0001 <sup>(1)</sup>
	≥ 60	1221	1217	4	99.7		1457.6	

  

Variable	Groups	Implants placed	Implants survived	Implants failed	CSR (%)	Odds ratio	95% C.I.	p-value
ISQ at insertion	< 65	69	64	5	92.8	6.1	1.7–18.3	< 0.01 <sup>(1)</sup>
	≥ 65	1183	1168	15	98.7			
ISQ at loading	< 65	64	46	18	71.9	227.8	52.1–	< 0.0001 <sup>(1)</sup>
	≥ 65	1188	1186	2	99.8		2124.6	

  

Variable	Groups	Implants placed	Implants survived	Implants failed	CSR (%)	Odds ratio	95% C.I.	p-value
ISQ at insertion	< 70	132	127	5	96.2	2.9	0.8–8.6	0.051 <sup>(1)</sup>
	≥ 70	1120	1105	15	98.7			
ISQ at loading	< 70	133	115	18	86.5	86.9	20.4–	< 0.0001 <sup>(1)</sup>
	≥ 70	1119	1117	2	99.8		770.1	

  

Variable	Groups	Implants placed	Implants survived	Implants failed	CSR (%)	Odds ratio	95% C.I.	p-value
ISQ at insertion	< 75	367	354	13	96.5	4.6	1.7–13.7	< 0.001 <sup>(1)</sup>
	≥ 75	885	878	7	99.2			
ISQ at loading	< 75	374	355	19	96.7	46.8	7.4–	< 0.001 <sup>(1)</sup>
	≥ 75	878	877	1	99.9		1933.1	

(1) Fisher's Exact Test.

**Disclosure of Interest:** None Declared.**Keywords:** Implant stability, Implant surface, Implant survival**EAODGI2023-543/PO-SU-026 | 3-dimensional evaluation of E-polycaprolactone containing membrane's efficacy in guided bone regeneration: A retrospective study**Cem Ungor<sup>1\*</sup>, Cavad Bextiyarli<sup>2</sup>, Seyit Yılmaz<sup>3</sup><sup>1</sup>Oral and Maxillofacial Surgery, <sup>2</sup>Karadeniz Technical University, Trabzon, <sup>3</sup>Beykoz University, Istanbul, Turkey

**Background:** The most common problem encountered during implant surgery is the need for sufficient bone in the area. After tooth extraction, alveolar bone resorption decreases the amount of bone in the area over time. In cases where there is not enough bone for the proper implant position, bone augmentation procedures are applied before implant surgery. Guided bone regeneration (GBR) is one of the most commonly used treatment options for the repair of vertical and horizontal bone defects.

**Aim/Hypothesis:** This study aims to evaluate the effectiveness of synthetic polycaprolactone (PCL) bioscaffold membranes used in ridge augmentation in maxillofacial surgery on the amount of newly formed bone after application in three-dimensional (3D).

**Material and Methods:** Patients treated from 03.05.2021 to 01.03.2023 in the Department of Oral and Maxillofacial Surgery of the Faculty of Dentistry of Karadeniz Technical University were included in this retrospective study. Patients with a vertical and horizontal bone deficiency in the mandible and maxilla were included in this study. In each patient, bone defects were treated with polycaprolactone bioscaffolds and particulate allografts combined with injectable platelet-rich fibrin.

All augmented sites were covered by leukocyte and platelet-rich fibrin membranes. The amount of bone was evaluated with cone-beam computerized tomography.

(CBCT) before and six months after augmentation. The data were analyzed with a significance level of  $\alpha = 0.05$ .

**Results:** Patients (7 females and five males) were included in the study after excluding patients with systemic conditions and using drugs that affect bone metabolism. The mean values of vertical bone gain were  $1.63 \pm 0.69$  mm, and the mean values of horizontal bone gain were  $4.03 \pm 1.45$ . Six patients had a knife-edge crest before grafting. Dental implants with a diameter of at least 3.75 mm were applied to these patients six months after augmentation. The implant survival rates were 100% in all patients.

**Conclusion and Clinical Implications:** Based on the study results, PCL-containing bioscaffolds can be safely used in GBR augmentation. In this study, we were able to successfully augment the knife-edge crests, resulting in implant treatment. However, long-term follow-up is necessary for the survival and stability of the implants. I confirm that ethical permits and approvals are in place in accordance with regulations: Yes, I confirm that ethical permits and approvals are in place.

**Disclosure of Interest:** None Declared.**Keywords:** Biomaterial, Guided bone regeneration, Retrospective study**EAODGI2023-707/PO-SU-027 | Comparative evaluation of UVC, laser surface patterning and argon plasma treatment of titanium on its osteogenic potential – An in vitro pilot study**Aishwarya Panicker\*, Ramesh Nayakar  
Prosthodontics, KLE VKIDS, Belgaum, India

**Background:** Dental implants have reliable, therapeutic and predictable outcome for replacing lost teeth. Osseointegration is crucial to maintain stability between implants and newly formed peri-implant bone. Titanium is the most widely used dental implant material. Modifying the surface quality of implant improves surface roughness, free energy and chemical composition. This not only aids in rapid healing but also enhances cell migration and attachment to implant, and hence better osseointegration.

**Aim/Hypothesis:** Aim of the study: To assess the osteogenic potential of titanium treated with photo-functionalization, argon plasma surface treatment and laser surface patterning.

**Material and Methods:** Method: Identical Titanium discs of Grade 5 of dimensions 10 mm × 2 mm in diameter were sandblasted for 1 min at a constant pressure of 4 kg/cm<sup>2</sup> with 50 μm alumina. The discs were then ultrasonically cleaned using acetone for 180 seconds to remove any residual contaminants. The discs were divided into 4 groups and they were subjected to autoclaving, UVC (270 nm), argon plasma sterilization and laser surface patterning respectively. MG-63 cells were cultured on these discs and osteogenic potential was tested by cell attachment (by washing the discs with PBS and counting with haemocytometer) and cell proliferation (by MTT assay).