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Original Research Paper

PROSTHODONTICS & IMPLANTOLOGY

ASSESSMENT OF KNOWLEDGE AND PRACTICE OF PLATELET RICH FIBRIN TECHNIQUE IN DENTAL IMPLANTS AMONG THE GENERAL DENTAL PRACTITIONERS IN CHENNAI - A CROSS SECTIONAL STUDY

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ABSTRACT

Purpose: The objectives of this study were to assess the awareness and to evaluate the knowledge of dentists of Chennai regarding PRF technique in dental implant practice.

MATERIALS AND METHODS: A self-structured questionnaire was distributed to 103 urban general dental practitioners of Chennai. The questionnaire covered general basic information and assessed the knowledge, attitude and practice of GDPs regarding PRF technique in implant dentistry. Descriptive analysis was carried out for the responses.

RESULTS: The data was analyzed using SPSS V25.0. and the categorized variables were analyzed using chi-square test. $P<0.05$ is considered significant.

CONCLUSION: After thorough evaluation, it can be concluded that with growing popularity of PRF technique , there is a need to introduce basic knowledge about prf and growth factors use at undergraduate level; training programs should be provided or undertaken at postgraduate level to improve their skills and knowledge and gain confidence to perform the technique in clinical practice .

KEYWORDS : PRF technique, Dental Implants, General Dentist, Survey.

INTRODUCTION :

In implant dentistry , for a successful osseointegration there must be stable interface between the hard and soft tissues around the dental implant. After the implant placement , a sequence of healing events take place to form a intimate contact between the bone and the titanium surface .Development of the bioactive materials play a major role in regulating the inflammatory process and also in increasing the speed of healing process clinically [1].

Bone grafts can be broadly classified in to four groups namely, the autograft ,allograft ,alloplast and xenograft .This classisfication was given based on the source of graft extraction .Hence these biomaterials use human, animal, and synthetic substitutes to implement growth. Each grafting procedure has its own advantages and limitations. The drawbacks from each technique led to the continual discovery of new treatment modalities.

Ross et al in 1974 was the first to describe about the growth factors and their importance in regenerative capacity [2].Later It has been observed that the growth factors are responsible for increase in collagen production, cell division, blood vessels growth, regenration of other cells that migrate to the site of injury, and cell differentiation induction. [3]. Choukron et al later observed and described the use of Platelet Rich Fibrin (PRF) from the patients own tissue and blood ,hence provides enhanced healing after surgical procedures. Recent Studies demonstrated that PRF enhances bone and soft tissue regeneration, without allergic reactions, promoting hemostasis, and can be used in conjunction with other bone grafts [4,5].

Although this technique is not relatively new, the clinical practice and awareness about the advantages of this PRF technique are still not adequate. The purpose of this study is to determine the knowledge, awareness and clinical Practice of PRF technique among the general dental practitioners within Chennai .

METHODOLOGY:

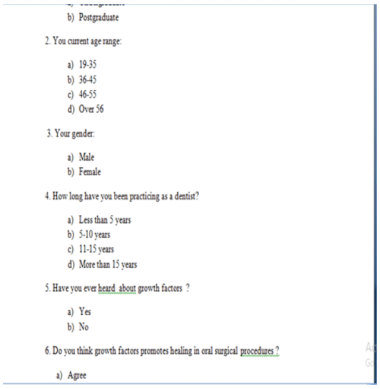
A questionnaire based cross sectional study (survey) was conducted among dentists throughout Chennai to determine the level of knowledge and implementation of PRF technique within the clinical setting.

Sampling technique

Since the study was done in a short duration , a convenient sampling technique was selected .Hence the dentists were selected by convenience sampling method. The sampling unit consisted of dentists practicing in government and private sectors of medical institutions in Anna nagar and Mogappair ,Chennai.

The survey contained 15 multiple choice questions and began by collecting demographic, age, gender, and current practice related information.. In addition to assessing the level of practice, it was also focused to determine the relation between the use of PRF technique and the age of the practitioner and number of years each dentist has been practicing.

The questionnaire was given to 103 dental practitioners of Chennai who formed the study group for this study. In the study group 62 had under graduate qualification and 41 had completed post graduate M.D.S degree of various specialties. The details of the questionnaire were shown in Fig 1. The filled questionnaires were collected and the results were tabulated and subjected to statistical analysis.



b) Postgraduate

2. You current age range:

a) 19-35
b) 36-45
c) 46-55
d) Over 56

3. Your gender:

a) Male
b) Female

4. How long have you been practicing as a dentist?

a) Less than 5 years
b) 5-10 years
c) 11-15 years
d) More than 15 years

5. Have you ever heard about growth factors ?

a) Yes
b) No

6. Do you think growth factors promotes healing in oral surgical procedures ?

a) Agree

Figure 1

STATISTICAL ANALYSIS

The qualitative data was expressed by Chi-square test and Fisher's exact test was used. For statistical analysis, SPSS software version 25.0 was used

Table 1 - Comparison of knowledge and practice based on qualification

Question	Options	UG (BDS)	PG (MDS)	P value
Awareness about growth factors	Yes	62	24	0.593
	No	10	7	
Familiarity with PRF technique	Yes	32	40	0.534
	No	12	16	
Use of PRF technique in clinical practice	Yes	6	3	0.056
	No	60	25	
Can PRF decrease healing time period in dental implants	Yes	32	12	
	No	40	16	
Drawback of using PRF technique	Cost	18	10	0.021
	Technique sensitive	36	11	
	Allergy reaction	17	3	
	Others	1	4	

Table 2 – Based On Qualification

		FREQUENCY	PERCENT
Valid	BDS	61	59.2
	MDS	42	40.8
	TOTAL	103	100.0

RESULTS

Each dentist was questioned if he or she has heard about the PRF technique . There were 103 total responses to the question with 86 dentists (85%) being familiar and 17 (18%) being unfamiliar. Of the 86 who are familiar with this technique, 9(10.5%) practice this technique in Chennai .

Dentists were also questioned on whether they are using PRF technique in the clinical setting . Of the 86 responses who are aware about prf , 9 dentists (10.4%) are using this technique in their practice and 77 dentist (89.53 %) are not practicing this technique in clinical setting.. Of the 9 dentist who are practicing PRF technique, 5 are postgraduates and the rest 4 dentists are undergraduates . This will help to better assess if there is a trend behind its use within the clinical setting.

DISCUSSION

With rapidly growing use of dental implants, dentist may encounter more number of patients with dental implants. The maintenance of such implant cases may then fall upon general dental practitioner. The dentist should have knowledge about case selection and maintenance about dental implants at low,medium and high risk scenarios .

The use of bone graft materials such as PRF are best suited to Surgical procedures because this material has the stimulating effect on the healing of soft and hard tissues as it poses the advantages like that it can be used solely or in combination with bone grafts, depending on the procedure done [6,7]; increases the healing rate of the grafted bone [8] ; it is an economical technique compared with recombinant growth factors when used along with bone grafts[9].

In our survey, very few dental practitioners, are providing the implant treatment. Analysis of the survey revealed that even though many doctors had basic knowledge about prf and growth factors , they were not actively practicing the technique. The reasons that could be understood from the questionnaire were that they were not confident enough to practice such techniques due to lack of formal training . Those who are doing generally wanted to improve their implant success in their daily practice by improving their knowledge and skill through attending lectures, advanced courses and clinical hands on. There is a generalized feeling among dental practitioners that they did not have adequate clinical training in Prf technique at undergraduate level. This indicates to introduce basic knowledge about prf technique ,its uses and disadvantages in under graduation and also training programs in the under graduate level. Hence thorough knowledge and skills are required to practice the prf technique in dental implant procedures to obtain the desirable outcome.

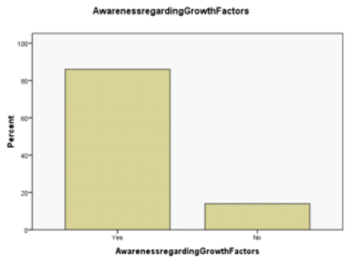


Figure 2

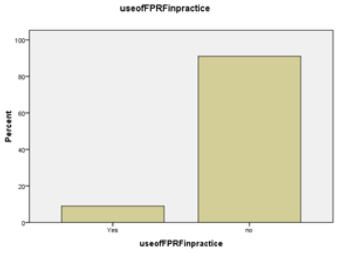


Figure 3

Limitation :

Due to short duration of study, convenience sampling technique was used. Hence,the results of the study cannot be generalised due to the potential bias in sample size estimation.

CONCLUSION:

After thorough evaluation, it can be concluded that with growing popularity of PRF technique , there is a need to introduce basic knowledge about prf and growth factors use at undergraduate level; training programs should be provided or undertaken at postgraduate level to improve their skills and knowledge and gain confidence to perform the technique in clinical practice.

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