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AWARENESS ABOUT REGENERATIVE THERAPY WITH OF PLATELET RICH PLASMA (PRP) AMONG DENTAL STUDENTS

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Abstract

Platelet Rich Plasma(PRP),serving as a vehicle and wellspring of development factors, is an homologous plasma formulation with congregated platelets broadly studied for its applications as a bioactive scaffold in cell-based intervention and tissue engineering .The aim of the study was to assess the awareness about regenerative therapy with of platelet rich plasma (PRP) among dental students.A cross sectional study was done with a self-administered questionnaire with 10 questions circulated among 100 dental students. The questionnaire assessed the awareness about PRP regenerative therapy in surgical applications ,their endodontic uses,periodontal applications,impant surgical applications and bone healing.The responses were recorded and analysed .82% of the respondents were aware of surgical applications of PRP regenerative therapy .73% were aware of endodontic uses of regenerative therapy .77% of the respondents were aware of periodontal applications of PRP regenerative therapy .75% of the respondents were aware of implant surgical applications of PRP regenerative therapy. 78 % of the respondents were aware of bone healing properties of PRP regenerative therapy .The awareness about the use of PRP regenerative therapy in dental applications is high among dental students.Increased awareness programs and sensitization and continuing dental education programs along with greater importance to the curricular modifications can further enhance knowledge and awareness about PRP regenerative therapy.

***Keywords**: Awareness, platetet rich plasma, dental students*

Introduction

Regenerative treatments have been developing as practical medicines for some illnesses. The significant helpful advantages of regenerative medication originate from the paracrine activity of trophic variables at critical

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focuses which, among numerous activities, animate endogenous begetter cells to advance multiplication and recuperating . (Thakur et al., 2015) Platelet Rich Plasma (PRP),serving as a vehicle and wellspring of development factors, is an homologous plasma readiness with congregated platelets widely explored for its postulation as a bioactive framework in cell-based treatment and tissue designing (Cervantes et al., 2018) .

As of late, PRP has step by step become a concentration in regenerative medicine for its utilization in dental and medical procedures. Numerous examinations have detailed the viability of PRP as a management methodology in various oral issue(Albanese et al., 2013; Meschi et al., 2016) . However, a few concerns ought to be noted, especially as to the planning of PRP management and the real clinical impact on oral issue, and techniques for PRP preparation(Anitua, Sánchez, et al., 2006; Pascale et al., 2015). The aim of this study is to assess the awareness about regenerative therapy with of platelet rich plasma among dental students.

Materials and method

A cross sectional survey was done with a self-administered questionnaire with 10 questions circulated among 100 dental students. The questionnaire assessed the awareness about PRP regenerative therapy in surgical applications ,their endodontic uses,periodontal applications,impant surgical applications and bone healing.The responses were recorded and analysed.

Results

82% of the respondents were aware of surgical applications of PRP regenerative therapy (Fig 1) .73% were aware of endodontic uses of PRP regenerative therapy(Fig 2) .77% of the respondents were aware of periodontal applications of PRP regenerative therapy (Fig 3)75% of the respondents were aware of implant surgical applications of PRP regenerative therapy (Fig 4)78 % of the respondents were aware of bone healing properties of PRP regenerative therapy (Fig 5).

Fig 1: Awareness of surgical applications of PRP regenerative therapy

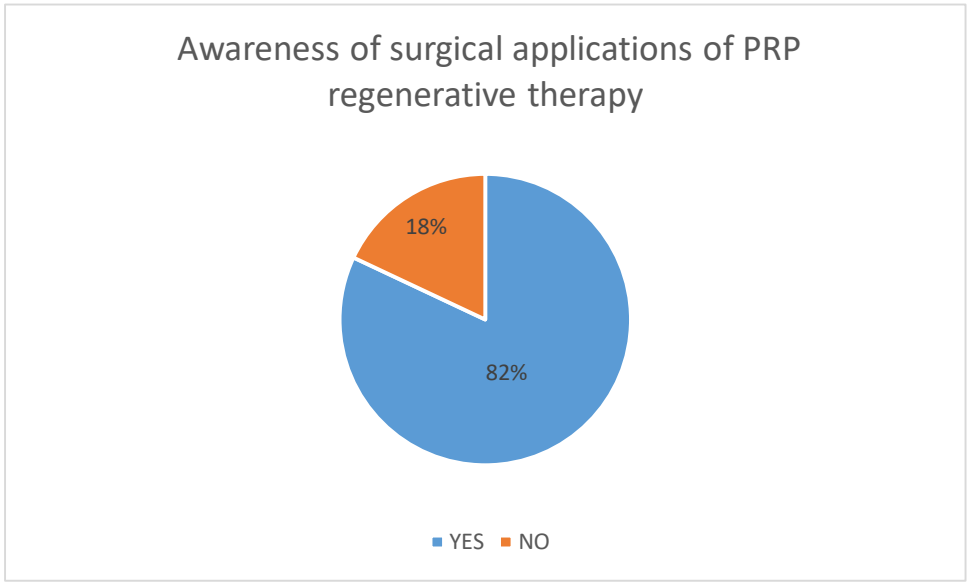


Fig 2: Awareness of endodontic uses of PRP regenerative therapy

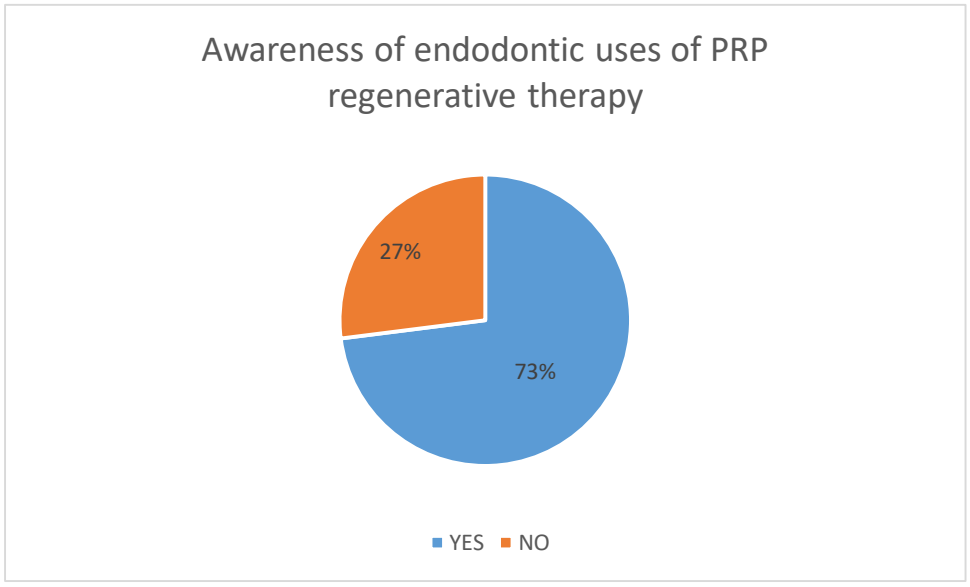


Fig 3: Awareness of periodontal applications of PRP regenerative therapy

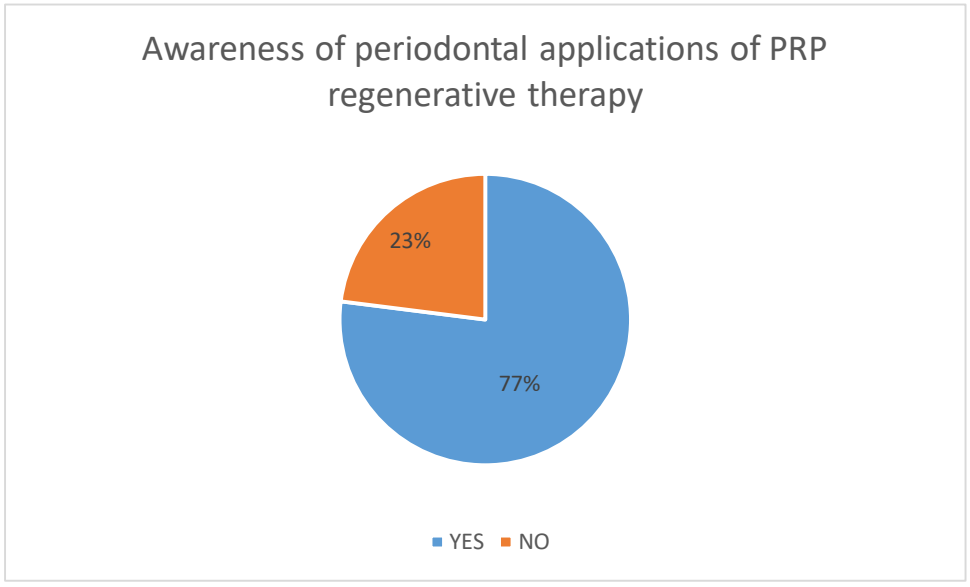


Fig 4: Awareness of implant surgical applications of PRP regenerative therapy

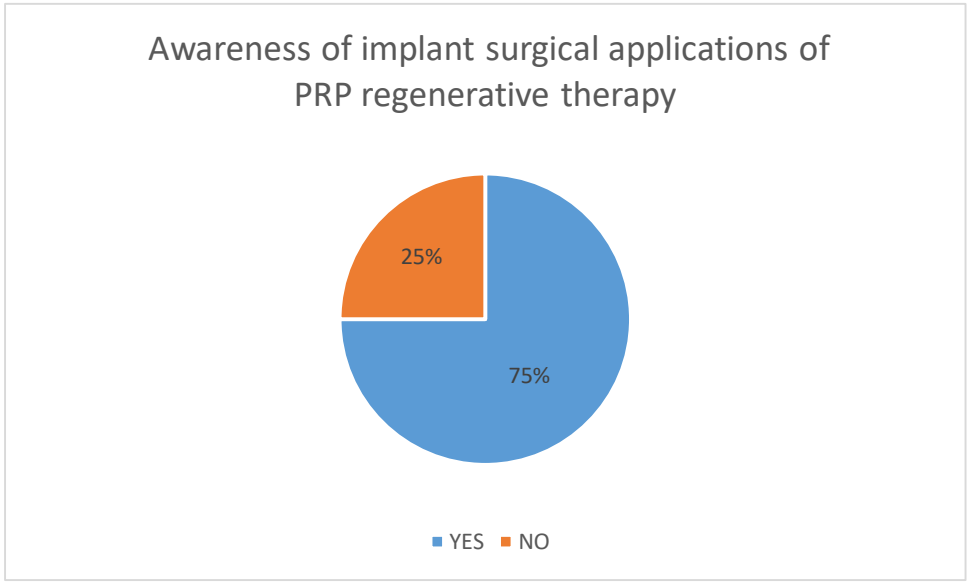
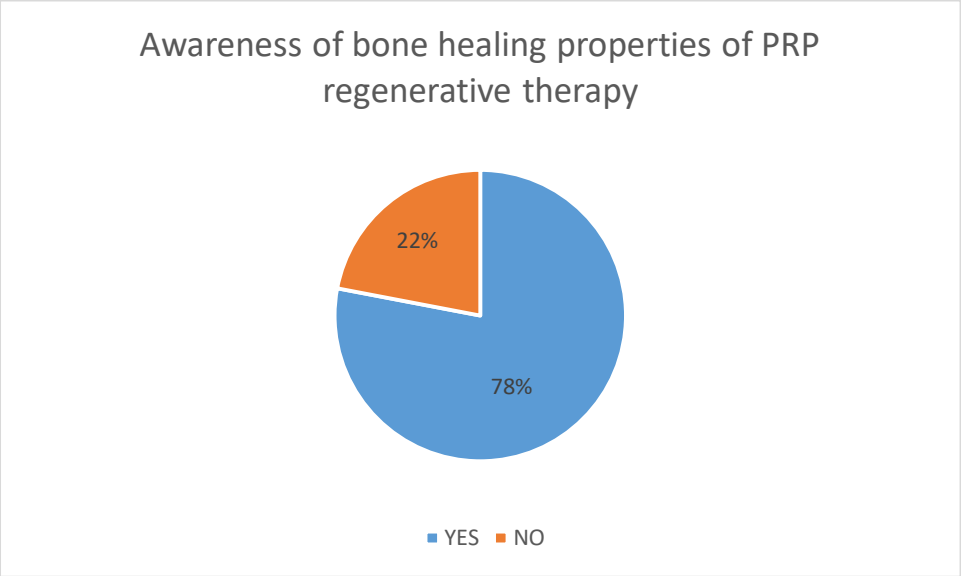


Fig 5: Awareness of bone healing properties of PRP regenerative therapy



Discussion

PRP is proposed as a prospective platform for recuperative endodontic treatment [9] . In any case, in numerous preclinical creature considers and confined clinical case reports, PRP initiated the growth of vascular connective weave in endodontically sterilized root canals, however demonstrated insignificant proof of dentin arrangement. In this manner, no current PRP items could go about as platforms to recover the dentin-pulp complex (Dianat et al., 2017; Zhu et al., 2013). A definitive objective of recuperative endodontics is the dynamic quest for pulp and dentin recovery through the utilization of tissue building innovation. In any case, the advancement of this innovation stays in beginning periods. Extra translational examinations are expected to explore the result of the use of PRP in regenerative endodontic management, just as to set up a normalized PRP arrangement convention concerning platelet focus ,type of clotting activator, and leukocyte content with ideal capacity to impact organic effects. (Anitua, Sanchez, et al., 2006)

Distributed clinical reports have uncovered an assortment of dubious results as for the helpful viability of PRP in periodontal regenerative systems. For sure, numerous variables can impact the consequences of periodontal regenerative treatment in these reports, including research configuration, clinical boundaries, graft materials, or perception period. The additional impact of PRP when utilized in blend with various joining materials has been disputable in a set of controlled clinical examinations . For instance, a few investigations have indicated more noteworthy enhancements in PD decrease and CAL when PRP was joined with a uniting material, while others have neglected to exhibit critical contrasts (Okuda et al., 2005) .

In light of the moderate metabolism of bony tissue, radiographic bone fill may necessitate a more drawn out perception period to identify a positive outcome .Thus, fitting investigation plan, cautious assurance of the surgery, and expanded perception time ought to be viewed as when utilizing PRP as a possibility for clinical periodontal regenerative management.(Pradeep et al., 2017)

PRP was first acquainted with the oral and maxillofacial medical procedure network by Whitman et al. (1997). PRP incorporate numerous development factors that can impact wound recuperating, embed arrangement, and reconstructive medical procedure of mandibular deformities (Lee et al., 2009). Critical upgrades in neighborhood conditions are seen after PRP application. So far, contemplates have uncovered that the high grouping of development factors discharged in the alveolar attachment following tooth extraction builds tissue recovery and forestalls the event of nearby complexities. (Gosain, 2011).

Delicate tissue mending is reinforced through the use of PRP, which expands collagen content, advances angiogenesis, and upgrades early twisted quality . PRP is likewise a legitimate method for advancing bone recovery at the distal surface of the mandibular second molar after extraction of affected third molars . PRP allegedly improves bone recovery in its initial stages . As of late, in vitro examinations of the cell instrument fundamental improvement of bone fix have reasoned that PRP invigorates chemotactic relocation and expansion of human mesenchymal cells in a portion subordinate way without loss of their potential for osteogenic advancement .(Thuaksuban et al., 2010)However, some different investigations on autologous development factors demonstrated unfavorable outcomes with advancing bone arrangement and recuperating. Ranly et al. revealed that PRP treatment decreased osteoinductivity of demineralized bone framework in immunocompromised mice (Gentile et al., 2010) . These outcomes recommend that most of the surveyed clinical preliminaries have revealed empowering results, further appropriately controlled and all around structured clinical preliminaries are expected to give strong proof of the limit of PRP for regenerative management in oral medical procedure.

Platelet-rich concentrates, for example, PRP and PRF are ongoing developments being used in harmed dental tissue designing. PRP is a prototype of PRP protein acquired from entire blood and centrifuged to expel the red platelets. The rotator speed and term have been accounted for to impact platelet amount, advancement rates, development factor discharge, and PRP adequacy (Ranly, Boyan, et al., 2007). PRF is a second-age platelet-rich concentrate where autologous platelets and leukocytes are available in a perplexing fibrin network. It was set up from entire blood without expansion of anticoagulants. Normal PRF is centrifuged at 3000 RPM for a period of 10 min (Ranly, Lohmann, et al., 2007) .

The benefits of utilizing PRF incorporate simplicity of planning, and no expansion of biochemical causal agent or anticoagulants . Contrasted and PRP which becomes fluid finished results that has momentary impacts, PRF fibrin arrange structures a single tri dimensional structure with long haul impact on tissue recovery by conveying cytokines gradually . PRP ought to be newly arranged and utilized inside 4 hours, as practically 95% of the development factors are discharged inside the main hour after planning. Interestingly, PRF animates the

micro environments of tissue mending for an extensive timeframe and keeps on discharging development factors as long as about a month . Be that as it may, PRF isn't equipped for supplanting PRP in every single remedial zone, and its minimal three-dimensional structure impedes its utilization as an injectable specialist (Kardos et al., 2019) . PRF is basically utilized for supplanting harmed tissues in orthopaedics, and wound recuperation . In addition, a higher arrival of PDGF-BB, TGF-β1 and VEGF was seen in PRP than in PRF in the initial 8 hours after PRP formulations.Specific platelet collection hindrance acted in PRP, yet not in PRF, may be an important factor in development factor yield.(Feigin & Shope, 2019)

As a biologic careful added substance, PRP has been effectively utilized for different utilities in dental regenerative medication. Be that as it may, a few uses of PRP stay dubious.(Ranly et al., 2005) To additionally investigate the clinical focal points of PRP, the summed up signs for its application and deliberate planning conventions ought to be built up. Extra examinations are expected to build up the helpful viability of PRP in regenerative dentistry; these investigations ought to incorporate randomized, controlled clinical preliminaries intended to survey the drawn out advantages and extreme results of the utilization of PRP. By and large, PRP treatment seems to have a splendid application in regenerative dentistry.

Conclusion

The awareness about the use of PRP regenerative therapy in dental applications is high among dental students. Increased awareness programs and sensitization and continuing dental education programs along with greater importance to the curricular modifications can further enhance knowledge and awareness about PRP regenerative therapy.

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Conflict of Interest:

The authors declare that they have no conflict of interest.

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