Content available at: https://www.ipinnovative.com/open-access-journals

Journal of Dental Specialities

Journal homepage: https://www.jdsits.in/

Original Research Article

Comparative evaluation of the efficacy of platelet-rich plasma and dexamethasone injections in myofascial pain trigger points in the masseter muscle

Qazi Saba[1], Akshay Rathore[1]*, Anuradha Yadav[1], Saplin Pradhan[1], Sylvia Waikhom[1], Achom Uma[1]

[1]Dept. of Oral Medicine and Radiology, ITS Dental College, Muradnagar Ghaziabad, Uttar Pradesh, India

Abstract

Background: Myofascial pain syndrome (MPS) is characterized by muscle pain and tenderness, often associated with myofascial trigger points (MTrPs). These MTrps can cause referred pain and muscle dysfunction, such as in the masseter. Platelet-rich plasma (PRP) therapy has emerged as a treatment for myofascial pain due to its regenerative properties, while corticosteroids like dexamethasone are commonly used for their anti-inflammatory effects. This study aims to compare the efficacy of PRP and dexamethasone injections in treating MTrPs in the masseter muscle.

Materials and Methods: This study involved 30 participants (age 18-40) with active MTrPs in the masseter muscle. Participants were randomly assigned to two groups to receive either dexamethasone (Group 1, Dexamethasone =15) or platelet-rich plasma (Group 2, PRP 15). Pain levels were measured using the Visual Analog Scale (VAS), and functional outcomes were assessed via Maximum Interincisal Opening (MIO) and Pain Perception Index (PPI) at baseline, Day 0, Day 5, Day 15, and one month

Results: Both treatments significantly reduced pain and improved functional outcomes (MIO and PPI) over time. No significant differences were found between the PRP and dexamethasone groups in pain reduction or functional improvements ($p > 0.05$).

Conclusion: PRP and dexamethasone are equally effective in managing pain and improving function in MPS. Larger studies with longer follow-ups are needed to confirm these findings.

Keywords: Myofascial pain syndrome, Myofascial trigger points, Platelet-rich plasma, Dexamethasone, Masseter muscle, Pain relief, Functional recovery, Regenerative therapy.

Received: 16-07-2025; **Accepted:** 19-08-2025; **Available Online**: 29-09-2025

1. Introduction

‘‘Pain is an unpleasant emotional experience associated with actual or potential tissue damage, as defined by the International Association for the Study of Pain (IASP)’’. It consists of noxious transmission, psychological, and modulatory elements**.** Nociception refers to the reception and transmission of harmful stimuli through A-delta and C Fibers to the central nervous system (CNS) for modulation. Bell defines pain as the subject’s conscious perception of modulated nociceptive impulses, classifying orofacial pain into Axis I (physical conditions) and Axis II (psychological conditions). Axis I includes deep somatic pain, musculoskeletal pain, and myofascial pain.[1]

Myofascial Pain Syndrome (MPS) is characterized by localized muscle pain and tenderness, often due to myofascial trigger points (MTrPs)—hyperirritable nodules within taut muscle bands. MTrPs are classified as active (causing pain) or latent (asymptomatic but tender).[2] MTrPs contribute to headaches, including migraines and tension-type headaches.[3] The masseter muscle, essential for mastication, is commonly affected in myofascial pain dysfunction syndrome, leading to jaw pain, headaches, and chewing discomfort. Poor vascular flow and inflammation at TrPs exacerbate pain and dysfunction.[4]

The leading theory suggests that TrPs develop from excessive muscle use, including sub-maximal and eccentric

*Corresponding author: Akshay Rathore
Email: drrathoreakshay@gmail.com

https://doi.org/10.18231/j.jds.41431.1759130456

contractions, which leads to localized ischemia, reduced pH, and inflammation.[5] Diagnosis requires at least one MTrP, a palpable tight muscle band, and a "jump sign" upon palpation. MPS is a biopsychosocial condition influenced by biological, cognitive, and emotional factors. The transition from acute to chronic pain remains unpredictable.

Treatment options include NSAIDs (e.g., ibuprofen, naproxen) for temporary relief and muscle relaxants (e.g., cyclobenzaprine) to reduce spasms, though sedation may occur.[6] Jaw exercises improve mobility with adherence, while manual myofascial release of trigger points and heat/cold therapy offer short-term relief. Ultrasound enhances circulation, and TENS aids in pain relief but may cause discomfort or irritation. Dry needling targets trigger points to reduce spasms, but can be painful, invasive, and cause bruising. Botulinum Toxin-A reduces masseter spasms temporarily, with possible side effects like bruising, headache, and weakness. Corticosteroids (e.g., dexamethasone) are anti-inflammatory, but prolonged use risks atrophy, hyperglycaemia, osteoporosis, and mood change.[7,8] PRP therapy promotes healing via PDGF, NGF, and VEGF, with fewer side effects than corticosteroids but requires further research.[9]

2. Materials and Methods

2.1. Study design and ethical clearance

This randomized clinical trial was conducted at the ITS Dental College, Murad Nagar. Ethical approval was obtained from the institutional ethical committee under the protocol number ITSCDSR//IIEC/2022-25/OMR/01.

2.2. Sample selection

This study was conducted on 30 subjects, out of whom 19 were females and 11 were males. The randomization was done by the computer-generated block randomization of the patients who visited the Department of Oral Medicine and Radiology, ITS-CDSR Ghaziabad.

2.3. Inclusion criteria

1. Patients diagnosed with myofascial pain within the masseter muscle as per RDC/TMD (criteria I).
2. Patients who gave consent for participation in this study
3. Age 18 to 40 years

2.4. Exclusion criteria

1. Patients who have undergone treatment for myofascial pain in the past three months
2. Patients with any systemic, joint, or muscle disease
3. Patients with known temporomandibular (bone and disc) disorders or undergoing treatment for the same
4. Patients with active inflammation or allergies on the skin
5. Pregnancy/ Lactation
6. Patients with needle phobia

The patients were selected according to the inclusion criteria, who primarily complained of myofascial pain in the masseter muscle. The patients who met the inclusion criteria were clinically examined for the trigger points in the masseter muscle. The quantification of pain was done by a visual analogue scale, and maximum interincisal opening was recorded by a digital calliper. The tenderness assessed through palpation was measured using Okeson's pain pressure scale with scores 0-3, where: (0) indicates no pain reported and no observable reaction, (1) indicates a report of pain, (2) indicates painful tenderness accompanied by a visible reaction on the face and (3) indicates severe pain with a significant visible reaction or avoidance. Visual Analogue Scale (VAS) for Subjective assessment of pain from 0–10 was used. The patient was asked to select a number from 0-10 that represented the pain the patient feels, where 0 represents no pain and 10 represents the worst pain. The Maximal Interincisal Opening (MIO) was measured in millimetres using a digital calliper. The Pressure Pain Intensity (PPI) score, a pain intensity scale ranging from 0 to 3, was obtained by applying thumb pressure to the trigger points in the masseter for approximately 5 seconds, then recording the PPI score as listed below. 0- No report of pain and no visible reaction 1-Report of pain 2-Painful tenderness and visible reaction on the face 3-Severe pain and marked visible reaction or avoidance.

2.5. Prp preparation

The procedure commenced with a venous puncture, followed by the collection of a 10-ml autologous blood sample from the patient into a tube containing an anticoagulant, specifically sterile sodium citrate tubes, by the technique established by Anitua E.[22] The collected tubes were subjected to centrifugation at 1800 rotations per minute (rpm) for 15 minutes, which facilitated the separation of plasma (the upper layer) from packed red blood cells (RBCs) (the lower layer). The RBC layer was discarded, and a second centrifugation at 3000 rpm for 10 minutes was performed, resulting in a more concentrated platelet layer following the removal of platelet-poor plasma. Subsequently, injections were delivered into the masseter muscles. The patient was seated in an upright position and instructed to clench their jaw to identify and delineate the muscle boundaries (**Figure 1**). After the needle was inserted into the muscle, aspiration was performed to avoid injecting into blood vessels, and then the contents of the syringe (0.5ml/ TrP) were administered slowly. A band-aid was placed over the injection site following the procedure. The patient was observed for 10 minutes before discharge. Instructions for postoperative care included the use of ice packs on the injection site for pain relief.

2.6. Dexamethasone

Dexamethasone 4mg (DEXONA) was loaded in a 2 ml syringe with a 27-gauge needle, and the patient was positioned upright and instructed to clench to identify and

outline the muscle boundaries. 0.4 ml of the dexamethasone was injected into the trigger point.

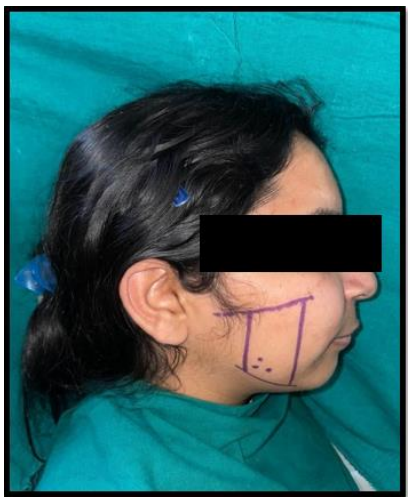

Figure 1: The patient has been positioned upright their jaw clenched to delineate the muscle boundaries. The three dots located at the lower belly of the superficial layer of the masseter muscle indicate the location of the trigger points.

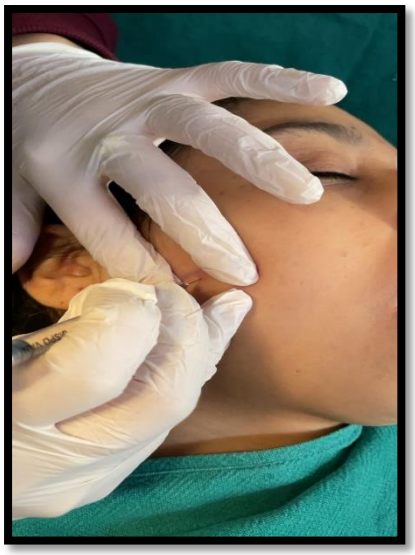

Figure 2: Platelet-rich plasma (PRP) injection into the masseter muscle

2.7. Intervention

The two groups were as follows: Group 1 - Dexamethasone (DEXONA) 0.4ml, and Group 2 - Platelet-rich plasma (PRP) 0.5ml. After clinically examining the patients who met the inclusion criteria, the trigger points were evaluated and marked before the procedure. The masseter muscles received injections. To determine and delineate the muscle boundaries, the patient was placed upright and taught to clench (**Figure 1**). The contents of the syringe (0.5 ml/ TrP) were administered gradually after the needle was inserted into the muscle and aspirated to prevent the injection of blood vessels. Subsequently, a pressure pack was applied to the injection site. The patient was monitored for ten minutes before discharge. To manage pain, postoperative care protocols recommend the use of ice packs at the injection site. The injection technique employed was the Boris Bentsianov technique 12. On Day 0, blood was collected from the patient and injected during the same visit, followed by patient evaluations on Day 5 and Day 15. A follow-up was conducted one month later.

3. Results

The study involved 30 subjects whose ages ranged from 18 to 40 years, who were randomly assigned to two groups (Group 1, Dexamethasone males (33.30%), 10 females (66.70%), Group 2, PRP: 6 males (40.00%), 9 females (60.00%).

In both PRP and dexamethasone groups, there was a statistically significant reduction in pain throughout the study ($p < 0.001$). The PRP group showed a decrease in VAS score from 7.33 ± 1.95 at baseline to 0.53 ± 0.64 at 1 month, while the dexamethasone group showed a reduction from 7.87 ± 1.73 to 0.33 ± 0.90. Pairwise comparisons (**Table 1**) indicated that significant pain reduction in the PRP group began as early as Day 5 ($p = 0.050$). In the dexamethasone group, the statistical significance was observed starting from Day 15 onwards.

When comparing the two groups directly, no statistically significant differences were observed at any time point ($p > 0.05$). Effect sizes ranged from 0.13 to 0.29, indicating small differences between groups. Although not statistically significant, the consistent downward trend in VAS values across time suggests both modalities are clinically effective, with PRP showing marginally better long-term relief. (**Table 1,2**)

Both groups demonstrated a significant improvement in MIO from baseline to 1 month ($p < 0.001$). The PRP group showed an increase from 28.87 ± 5.91 mm to 32.87 ± 5.78 mm, while the dexamethasone group improved from 30.47 ± 6.21 mm to 35.07 ± 7.21 mm. Early improvements in MIO were significant by Day 5 in the dexamethasone group ($p = 0.043$), whereas in the PRP group, significance was only observed from Day 15 onwards ($p < 0.001$).

Between-group comparisons showed no statistically significant differences in MIO at any time point ($p > 0.05$). Effect size ranged from 0.26 to 0.44, suggesting small to moderate differences in clinical outcomes, slightly favouring dexamethasone in the early phase. (**Table 3,4**)

Significant reductions in PPI scores were observed in both groups over time ($p < 0.001$). In the PRP group, mean PPI reduced from 2.73 ± 0.46 at baseline to 0.00 ± 0.00 at 1 month, reflecting complete resolution of tenderness. In comparison, the dexamethasone group showed a reduction from 3.00 ± 0.00 to 0.13 ± 0.35.

Pairwise comparisons highlighted significant improvement from Day 15 onward in both groups.

Interestingly, although dexamethasone showed slightly faster relief by Day 5 (PPI: 2.27), PRP led to complete alleviation by the end of the follow-up period, underscoring its reparative advantage.

No statistically significant intergroup differences were noted in PPI scores at any time point ($p > 0.05$). However, moderate effect sizes (0.47–0.60) suggest a clinically relevant benefit of PRP in reducing deep muscle tenderness, particularly by Day 15 and 1 month. (**Table 5,6**)

This table presents the pairwise comparison of the VAS score between different time points in each group. Day 5, day 15, and 1-month VAS scores in each group were significantly lower than the baseline VAS score in the PRP group, and day 15 and 1-month VAS scores in each group were significantly lower than the baseline VAS score in the Dexamethasone group.(**Table 1**)

This table compares the VAS score between the two groups. Starting from day 0, there was a non-significant difference in the VAS score of the two groups at baseline, after 5 days, 15 days, and 1 month. The effect size between the two groups at all the time points ranged from 0.13 to 0.29, which showed mostly a small difference between the two groups at each time point.(**Table 2**)

This table presents the pairwise comparison of the MIO between different time points in each group. In the PRP group, baseline and day-5 MIO values did not differ significantly. However, day-15 and 1-month MIO values were significantly greater than the baseline MIO values in the PRP group. Day 5, day 15, and 1-month MIO in Dexamethasone were significantly greater than the baseline VAS score.(**Table 3**)

Table 1: Pairwise comparison of VAS score between different time points in each group

Interval	PRP	Dexamethasone
Day 0 vs Day 5	0.050*	0.170
Day 0 vs Day 15	<0.001*	0.001*
Day 0 vs 1 month	<0.001*	<0.001*
Day 5 vs Day 15	0.719	0.623
Day 5 vs 1 month	0.014*	<0.001*
Day 15 vs 1 month	0.825	0.242

Post hoc Bonferroni test; * indicates a significant difference at $p \leq 0.05$

Table 2: Comparison of VAS score between the two groups

Interval	PRP		Dexamethasone		Effect size	Difference
	Mean	SD	Mean	SD		
Day 0	7.33	1.95	7.87	1.73	0.29	0.468
Day 5	3.40	2.20	3.93	1.79	0.26	0.539
Day 15	1.93	1.83	2.20	2.34	0.13	0.902
1 month	0.53	0.64	0.33	0.90	0.26	0.202

Mann-Whitney test

Table 3: Pairwise comparison of MIO between different time points in each group

Interval	PRP	Dexamethasone
Day 0 vs Day 5	0.203	0.043*
Day 0 vs day 15	<0.001*	<0.001*
Day 0 vs 1 month	<0.001*	<0.001*
Day 5 vs Day 15	0.396	0.170
Day 5 vs 1 month	0.065	0.170
Day 15 vs 1 month	1.000	1.000

Post hoc Bonferroni test; * indicates a significant difference at $p \leq 0.05$

Table 4: Comparison of MIO between the two groups

Interval	PRP		Dexamethasone		Effect size	Difference
	Mean	SD	Mean	SD		
Day 0	28.87	5.91	30.47	6.21	0.26	0.624
Day 5	30.87	5.58	33.60	6.89	0.44	0.250
Day 15	32.47	5.63	35.07	7.21	0.40	0.345
1 month	32.87	5.78	35.07	7.21	0.34	0.461

Mann-Whitney test

Table 5: Pairwise comparison of PPI between different time points in each group

Interval	PRP	Dexamethasone
Day 0 vs Day 5	0.623	1.000
Day 0 vs Day 15	<0.001*	0.001*
Day 0 vs 1 month	<0.001*	<0.001*
Day 5 vs Day 15	0.080	0.065
Day 5 vs 1 month	<0.001*	<0.001*
Day 15 vs 1 month	0.825	0.719

Post hoc Bonferroni test; * indicates a significant difference at p≤0.05

Table 6: Comparison of PPI between the two groups

Interval	PRP		Dexamethasone		Effect size	Difference
	Mean	SD	Mean	SD		
Day 0	2.73	0.46	3.00	0.00	--	0.217
Day 5	1.80	0.78	2.27	0.80	0.60	0.137
Day 15	0.67	0.62	1.07	1.03	0.47	0.345
1 month	0.00	0.00	0.13	0.35	--	0.539

Independent t-test

This table compares the MIO (in mm) score between the two groups. Starting from day 0, there was a non-significant difference in the MIO in the two groups at baseline, after 5 days, 15 days, and 1 month. The effect size between the two groups at all the time points ranged from 0.26-0.44which showed mostly a small to moderate difference between the two groups.(**Table 4**)

This table presents the pairwise comparison of the pressure pain intensity between different time points in each group. Day 15 and 1-month PPI values in each group were significantly lower than the baseline pressure pain intensity, and there was no difference between PPI values at baseline and after.(**Table 5**)

This table compares the pressure pain intensity score between the two groups. Starting from day 0, there was a non-significant difference in the pressure pain intensity in the two groups at baseline, after 5 days, 15 days, and 1 month. The effect size between the two groups at all the time points ranged from 0.47-0.60, which showed mostly a moderate difference between the two groups at each time point.(**Table 6**)

4. Discussion

Myofascial pain syndrome (MPS) involves muscle pain and tenderness, commonly associated with myofascial trigger points (MTrPs), which can lead to referred pain and impaired muscle function, particularly in muscles such as the masseter. Platelet-rich plasma (PRP) therapy has gained attention as a potential treatment due to its tissue-regenerating capabilities, while corticosteroids such as dexamethasone are widely used for their anti-inflammatory action. This study aims to evaluate and compare the effectiveness of PRP versus dexamethasone injections in managing MTrPs within the masseter muscle.

This randomized clinical trial investigated the comparative efficacy of Platelet-Rich Plasma (PRP) and dexamethasone injections in alleviating myofascial trigger point (MTrP) pain within the masseter muscle. Assessment was done using three key parameters: the Visual Analog Scale (VAS) for subjective pain intensity, Maximum Interincisal Opening (MIO) for jaw mobility, and Pressure Pain Index (PPI) for tenderness on palpation.

In the present study, both treatment modalities significantly reduced pain scores from baseline ($p < 0.001$). PRP treatment lowered VAS from 7.33 ± 1.95 at Day 0 to 0.53 ± 0.64 at 1 month, while dexamethasone reduced VAS from 7.87 ± 1.73 to 0.33 ± 0.90 in the same timeframe.

These results align with the study done by Morad et al. reported a decrease in VAS from 7.67 ± 1.2 to 1.12 ± 0.9 after PRP injection at MTrPs over four weeks, indicating a similar trend in pain alleviation[1]. Dakrory et al. found PRP to reduce VAS from 8.2 ± 1.1 to 1.0 ± 0.6 in patients with myofascial dysfunction, reinforcing PRP's efficacy over a similar period.[3] Abdel Aziz et al., who studied corticosteroids, reported a reduction from 8.0 ± 1.5 to 1.3 ± 0.7, corroborating our findings for dexamethasone.[2]

Though the VAS reduction between groups was not statistically significant ($p > 0.05$), the clinical trends suggest PRP may offer sustained analgesia, whereas dexamethasone provided slightly faster early relief (Day 5 VAS: PRP = 3.40, Dexa = 3.93). These differences, while small in effect size (0.13–0.29), may be important when choosing treatment modalities for acute vs. chronic pain phases.

Additionally, Hohmann et al. in their meta-analysis concluded that while corticosteroids provide short-term relief, PRP showed superiority in maintaining pain reduction beyond the 4-week mark, consistent with our findings.[29]

PRP improved MIO from 28.87 ± 5.91 mm at baseline to 32.87 ± 5.78 mm after one month. Dexamethasone showed a greater increase from 30.47 ± 6.21 mm to 35.07 ± 7.21 mm. This translates to an average improvement of 4.0 mm in PRP and 4.6 mm in dexamethasone, both clinically significant increases in mouth opening. Yilmaz et al. found PRP improved MIO from 29.4 ± 2.6 mm to 34.5 ± 2.1 mm, and local anesthesia (comparable to corticosteroids in efficacy) improved from 30.2 ± 2.9 mm to 35.8 ± 2.5 mm.[15] Aglan et al. reported PRP-induced improvement in MIO from 27.5 ± 1.9 mm to 33.6 ± 2.0 mm over a similar duration.[16]

These comparative values further validate our results. Notably, dexamethasone resulted in earlier functional improvement (Day 5 MIO: 33.60 ± 6.89 mm) versus PRP (30.87 ± 5.58 mm), reflecting its faster anti-inflammatory onset. However, PRP's improvement, although slower, showed consistent growth over time.

At baseline, the PPI for PRP was 2.73 ± 0.46, while dexamethasone was 3.00 ± 0.00, indicating severe tenderness. By Day 15, PRP reduced PPI to 0.67 ± 0.62, and by one month, complete resolution (0.00 ± 0.00) was observed. In contrast, dexamethasone showed 0.13 ± 0.35 residual tenderness at one month.

These values show PRP not only resolved pain but also normalized soft tissue sensitivity completely in most cases—an important distinction for long-term management. This is supported by a study done by Raeissadat et al., who found PRP reduced pressure pain from 2.7 ± 0.5 to 0.3 ± 0.6 by week four in tennis elbow patients.[11] El Mallah et al. showed near-zero PPI scores using PRP for plantar fasciitis pain, further substantiating its effectiveness.[14]

While dexamethasone exhibited quicker pain reduction by Day 5 (PPI: 2.27 ± 0.80 vs. PRP's 1.80 ± 0.78), it did not consistently achieve zero tenderness, making PRP a more complete therapeutic approach.

The effect size analysis across the study's results indicates that differences between PRP and dexamethasone were generally small for VAS (0.13–0.29) and MIO (0.26–0.44), suggesting comparable pain relief and functional improvement between groups, with dexamethasone showing a slight early advantage in mouth opening. In contrast, PPI outcomes showed moderate effect sizes (0.47–0.60), reflecting a clinically meaningful edge for PRP in eliminating deep muscle tenderness by one month. Although none of these intergroup differences reached statistical significance, the magnitude of change suggests PRP may offer more complete long-term recovery, while dexamethasone yields faster initial gains.

4.1. Clinical implications

The superior long-term efficacy of PRP is likely due to its biologic mechanism. PRP is rich in growth factors—PDGF, TGF-β, VEGF—that facilitate angiogenesis, tissue regeneration, and reduction of pro-inflammatory mediators.[9] This contrasts with dexamethasone's corticosteroid action, which primarily suppresses inflammation via inhibition of phospholipase A2 and cytokines like IL-1 and TNF-α.[7]

5. Limitations

Allocation concealment and blinding were not done in our study, which would have added to some potential bias to the research. The sample was small, and it is advisable to extend the sample for future evidence in the literature.

6. Conclusion

The findings of this study underscore the effectiveness of both PRP and dexamethasone in treating masseter myofascial trigger points. While dexamethasone produced rapid pain relief and early functional recovery, PRP achieved more comprehensive and sustained improvement across all parameters—pain intensity, jaw function, and tenderness resolution. Considering the regenerative potential of PRP and its minimal side-effect profile, it emerges as a promising long-term therapeutic agent in myofascial pain management. Future studies with larger sample sizes, longer follow-ups, and inclusion of additional biomarkers may further refine the clinical decision-making in injectable therapies for MPS.

7. Source of Funding

None.

8. Conflict of Interest

None.

References

1. Morad A, Abdellatif E M, Elmohandes W A. Evaluation of the role of platelet-rich plasma injection in trigger points for treatment of myofascial pain. *Al-Azhar J Dent Sci*. 2018;21(4):347–55.
2. Abdel Aziz OM, Abdelmoneim HS. Myofascial pain treatment: local anesthesia injection versus corticosteroids. (Randomized controlled clinical trial). *Egyp Dent J*. 2019;65(4):3349–55.
3. Dakrory U. Comparative study between usage of Platelet-Rich Plasma and Botulinum toxin a injection in management of Myofascial pain dysfunction. (A Randomized Clinical Trial). *Egyp Dent J*. 2022;68(1):121–33.
4. Khalil SI. Effect of Perineural Dextrose Injection on Myofascial Pain Syndrome. *AlAnbar Med J*. 2022;18(2):61–5.
5. Urits I, Charipova K, Gress K, Schaaf AL, Gupta S, Kiernan HC, Choi PE, et al. Treatment and management of myofascial pain syndrome. *Best Pract Res Clin Anaesthesiol*. 2020;34(3):427–48.
6. Galasso A, Urits I, An D, Nguyen D, Borchardt M, Yazdi C, et al. A comprehensive review of the treatment and management of myofascial pain syndrome. *Curr Pain Headache Rep*. 2020 Jun 27;24(8):43.
7. Nitecka-Buchta A, Walczynska-Dragon K, Kempa WM, Baron S. Platelet-rich plasma intramuscular injections—antinociceptive therapy in myofascial pain within masseter muscles in temporomandibular disorders patients: A pilot study. *Front Neurol*. 2019;10:250.
8. Peter I, Wu K, Diaz R, Borg-Stein J. Platelet-rich plasma. *Phys Med Rehabil Clin N Am*. 2016;27(4):825-53.
9. Johnson DB, Lopez MJ, Kelley B. Dexamethasone. InStatPearls [Internet] StatPearls Publishing, 2022.

10. Liu J, Liu Z, Tang Y, Munoz A, Zhang Y, Li X. Treatment with platelet-rich plasma attenuates proprioceptor abnormalities in a rat model of postpartum stress urinary incontinence. *Int Urogynecol J*. 2022;33(8):2159–67.
11. Sell SA, Ericksen JJ, Reis TW, Droste LR, Bhuiyan MB, Gater DR. A case report on the use of sustained release platelet-rich plasma for the treatment of chronic pressure ulcers. *J Spinal Cord Med*. 2011;34(1):122–7
12. Raeissadat SA, Sedighipour L, Rayegani SM, Bahrami MH, Bayat M, Rahimi R. Effect of platelet-rich plasma (PRP) versus autologous whole blood on pain and function improvement in tennis elbow: a randomized clinical trial. *Pain Res Treat*. 2014:191525.
13. Aufiero D, Vincent H, Sampson S, Bodor M. Regenerative injection treatment in the spine: Review and case series with platelet-rich plasma. *J Stem Cells Res Rev Rep*. 2015;2(1):1019.
14. El Mallah RM, Elattar EA, Zidan HF. Platelet-rich plasma versus dry needling of myofascial meridian trigger points in the treatment of plantar fasciitis. *Egyp Rheumatol Rehabil*. 2017;44:58–68.
15. Yilmaz O, Sivrikaya EC, Taskesen F, Pirpir C, Ciftci S. Comparison of the efficacy of botulinum toxin, local anesthesia, and platelet-rich plasma injections in patients with myofascial trigger points in the masseter muscle. *J Oral Maxillofac Surg*. 2021;79(1):88.e1–9.
16. Abaas RA, Sabry HA, Kamel HM, Awadallah NM. Clinical impact of magnesium sulfate injection versus local anesthetic injection on pain management in patients with myofascial pain dysfunction syndrome: a randomized clinical study. *Egyp Dent J*. 2025;71(1):145–53.
17. Aglan AM, Eldibany MM, Noureldin M, Abdel-Naby HM. Comparative study between botulinum toxin a and platelet-rich plasma in the treatment of myofascial pain within masseter muscle (a randomized clinical trial). *Alexandria Dent J*. 2024;49(2):91–9.
18. Anwar N, Wei X, Jie Y, Hongbo Z, Jin H, Zhu Z. Current advances in the treatment of myofascial pain syndrome with trigger point injections: A review. *Medicine*. 2024;103(40):e39885.
19. Saglam R, Delilbasi C, Ozel GS, Subasi ID. Evaluation of the effects of occlusal splint and masseter muscle injection in patients with myofascial pain: a randomised controlled trial. *J Oral Facial Pain Headache*. 2024;38(3):64–76.
20. Kostopoulos D, Rizopoulos K. The manual of trigger point and myofascial therapy. Routledge. 2024.
21. Bentsianov B, Francis A, Blitzer A. Botulinum toxin treatment of temporomandibular disorders, masseteric hypertrophy, and cosmetic masseter reduction. *Operative Tech Otolaryngology-Head Neck Surg*. 2004;15(2):110–3.
22. Anitua E, Prado R, Sánchez M, Orive G. Platelet-rich plasma: preparation and formulation. Operative Techn Orthop. 2012;22(1):25–32.
23. Okeson J. Management of temporomandibular disorders and occlusion.7th ed Mosby Elsevier (USA), 2013:273–75.
24. Reurink G, Goudswaard G, Moen M, Weir A, Verhaar J, Bierma-Zeinstra S, et al . Platelet-rich plasma injections in acute muscle injury. *N Engl J Med*. 2014,370(26):2546–7.
25. Refahee SM, Mahrous AI, Shabaan AA. Clinical efficacy of magnesium sulfate injection in the treatment of masseter muscle trigger points: A randomized clinical study. *BMC Oral Health [Internet]*. 2022;22(1):408.
26. Lee C, Song YK, Jeong HM, Park SN. The effects of magnesium sulfate infiltration on perioperative opioid consumption and opioid-induced hyperalgesia in patients undergoing robot-assisted laparoscopic prostatectomy with remifentanil-based anesthesia. *Korean J Anesthesiol [Internet]*. 2011;61(3):244–50.
27. Korkmaz N, Örücü Atar M, Uyar Köylü S, Aslan SG, Tezen Ö, Kesikburun S. Comparison of the efficacy of oxygen-ozone and lidocaine injections in the treatment of myofascial pain syndrome: A randomized clinical trial. *Turk J Phys Med Rehabil [Internet]*. 2023;69(3):294–302.
28. Hasuo H, Matsuoka H, Matsuda Y, Fukunaga M. The Immediate Effect of Trigger Point Injection With Local Anesthetic Affects the Subsequent Course of Pain in Myofascial Pain Syndrome in Patients With Incurable Cancer by Setting Expectations as a Mediator. *Front Psychiatry [Internet]*. 2021;12:592776.
29. Peng YN, Sung FC, Huang ML, Lin CL, Kao CH. The use of intravenous magnesium sulfate on postoperative analgesia in orthopedic surgery: A systematic review of randomized controlled trials. *Medicine (Baltimore) [Internet]*. 2018;97(50):e13583.
30. Yadav U, Ahmed J, Ongole R, Shenoy N, Sujir N, Nata Rajan S. Influence of Psychosocial Factors and Parafunctional Habits in Temporomandibular Disorders: A Cross-Sectional Study. *Perm J [Internet]*. 2020;24:144.
31. Hohmann E, Tetsworth K, Glatt V. Platelet-rich plasma versus corticosteroids for the treatment of plantar fasciitis: A systematic review and meta-analysis. *Am J Sports Med*. 2021;49(5):1381–93.

Cite this article: Saba Q, Rathore A, Yadav A, Pradhan S, Waikhom S, Uma A. Comparative evaluation of the efficacy of platelet-rich plasma and dexamethasone injections in myofascial pain trigger points in the masseter muscle. *J Dent Spec*. 2025;13(2):240-246.