



Comparative Analysis of Commonly Prescribed Analgesics After Frenectomy And Frenotomy with Scalpel and Laser - A Retrospective Study

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ABSTRACT

Frenectomy is the total removal of the frenum. Frenotomy is the repositioning of the frenum, to a more apical position. It can be performed by scalpel, electrocautery and laser techniques. Analgesics are considered as the most important drug groups in dental practice. This study was conducted with the aim to compare analgesics prescribed after frenectomy and frenotomy with scalpel and laser. We reviewed patient records and analysed the data of 105 patients between June 2019 to March 2020. The data of patients who underwent scalpel and laser frenectomy and frenotomy was reviewed and the data was tabulated. This university setting study involved 61 patients who had undergone scalpel and laser frenectomy and frenotomy. Data was tabulated with parameters of age, gender, treatment and analgesic prescribed. Data was then imported to SPSS for statistical analysis. Descriptive statistics and chi square test was done. The most commonly prescribed analgesic was Zerodol-P (aceclofenac+paracetamol) in scalpel and laser frenectomy and frenotomy. Scalpel frenectomy was the most commonly performed procedure. However, there was no significant association between the prescribed analgesics and the type of treatment. ($p>0.05$). Zerodol-P was the most commonly prescribed analgesic. The most commonly adapted technique was the scalpel frenectomy with a higher predilection in females. However, there is a need for extensive research to establish these facts.

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INTRODUCTION

Frenectomy and frenotomy are surgical procedures that differ in degree [1]. Frenectomy involves the total removal of the frenum, including its attachments to the alveolar process. Frenotomy is the repositioning of the frenum, usually in a more apical position. Any abnormalities in the size and location of the frenulum can cause functional and esthetic problems which requires surgical excision

[2]. The most common location for the development of frenum abnormalities is the maxillary and mandibular central incisors, canine and premolar areas. These abnormalities can result in gingival recession, the development of midline diastema and speech difficulties. Blanch test is the most commonly used method for the diagnosis of high frenal attachment. It involves the application of tension over the frenum by pulling it and visually

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detecting the movement of papillary tip or any blanching produced. Various methods have been used for the surgical excision of the frenum including scalpel, electrocautery and most recently lasers such as CO₂, neodymium-doped YAG (Nd:YAG) and erbium (Er):yttrium aluminum garnet (YAG) [3]. Choice of the method depends on the efficiency, effectiveness, and affordability. Each of these techniques differ from the following perspectives: anesthetic requirements, cutting characteristics, hemostasis, healing time, undesirable effects and cost involved.

Traditionally, the tool of choice for surgical incision has been the scalpel owing to its advantages of user friendliness, cost effectiveness, control, precision, superior associated wound healing and conservation of Tissue integrity [4]. The disadvantages of the scalpel include greater requirement of anaesthesia, necessity of suturing, poor hemostasis which obscures the operative field and adverse postoperative sequelae such as pain and swelling [5]. Electrosurgery has been used for a variety of soft tissue procedures, in dentistry. The coagulative effect of electrosurgery ensures a bloodless operating field with a clear view. However, the thermal injury due to heat dissipation may result in delayed wound healing and an increased risk of wound dehiscence. Lasers on the other hand are rapidly replacing the traditional treatment modalities due to their advantages of improved precision and visualization, minimal or no bleeding, reduced patient discomfort, shorter healing time and no unfavourable postoperative sequelae. They are minimally invasive in soft tissue procedures. A Frenectomy should always be performed on a thick frenum because of the pronounced tendency of a frenum to scar after surgery. This can produce a new frenulum that is shorter, if the surgery is not thorough enough, the outcome can be unsatisfactory. Based on the fiber attachment, the frenum is classified as follows by Placek et al : Mucosal: Fibers attached up to mucogingival junction, Gingival: Fibers which are inserted within the attached gingiva, Papillary: Fibers that extend into the interdental papilla and Papilla penetrating: Fibers that cross the alveolar process and extend up to the palatine papilla [6–8]. Analgesics are one of the most important drug groups in dental practice due to the efficacy, cost-effectiveness, the prescription rate and the safety profile of the drug group. Conventional analgesics are classified as non opioids and opioids, but the older terms “non-narcotic” and “narcotic” continue to be used. Research shows that both the classes have varying degrees of peripheral and central action [9,10]. These 2 classes of analgesics are differentiated primarily based on their mechanisms of action. The selection of an analgesic regimen based on the type and amount of pain the patient is

expected to have, can prevent the anxiety and stress associated with breakthrough pain [11,12]. For post-operative pain management, a viable alternative is non-steroidal anti-inflammatory drugs (NSAIDs). NSAIDs have been shown to reduce the need for opioids following periodontal surgery and simultaneously provide the necessary analgesic effects for acute pain management. When analgesics fail, the patients reach desperate lengths for relief. The clinician should develop an effective and safe analgesic regimen based on estimates of anticipated pain intensity that uses sound pharmacological principles [13].

Previously our team had conducted various studies on treatment modalities for periodontal diseases and periodontal procedures . Studies correlating various diseases and factors related to periodontal diseases [14,15], in-vitro & radiological studies [16,17], [18–37] reviews over the past 5 years. Now, we are focusing on the various other conditions that will guide us and give a deeper understanding in managing periodontal problems. The study was conducted to compare the commonly prescribed analgesics after frenectomy and frenotomy using scalpel and laser. These parameters were studied as they help in the administration of better post operative care for the patient.

MATERIALS AND METHODS

A retrospective study done in a university setting, which was approved by the Institutional Ethical Committee (ethical approval number- SDC/ SIHEC/ 2020/ DIASDATA/ 0619-0320). Two reviewers were involved in this study. The case records of patients who had undergone scalpel and laser frenectomy and frenotomy in Saveetha dental college from June 2019 to March 2020 was taken. Total sample size included 105 patients. The case sheets were then verified, to minimize sampling bias we included all the data available. We reviewed patient records and analysed the data of 105 patients between June 2019 to March 2020. The data of patients who underwent scalpel and laser frenectomy and frenotomy was reviewed and the data was tabulated. The data was verified by an external reviewer, which was then transferred to SPSS, a statistical software by IBM. Descriptive statistics was carried out. Chi square test was done and association analysis was carried out .

RESULTS AND DISCUSSION

The data was collected from the case records of patients who visited Saveetha dental college between June 2019 to March 2020 and it was tabulated in SPSS and the descriptive statistics was obtained. The total sample size was 105 patients which included 24 patients who underwent Laser Frenectomy-22.9%, 1 patient who underwent Laser

Frenotomy-1%, 66 patients who underwent Scalpel Frenectomy-62.9% and 14 patients who underwent Scalpel Frenotomy-13.3% [Figure 2]. There was a higher predilection of Frenectomy/ Frenotomy done in females-56.2% when compared to males-43.8% depicted in [Figure 1].

They were sorted into different groups based on the procedure they had undergone. Figure 3 shows the overall frequency of different analgesics prescribed; which included Combiflam (Paracetamol(325mg)+Ibuprofen(400mg))-2.9%, Zerodol-100mg(Aceclofenac)-9.5%, Zerodol-P

(Paracetamol(325mg)+Aceclofenac(100mg))-50.5%, Zerodol-S(Aceclofenac(100mg)+Serratiopeptidase(15mg))-18.1%, Zerodol-M(Aceclofenac(100mg)+Tizanidine(2mg))-2.9%, Dolo-650mg(Paracetamol 650mg)-4.8%, Imol(Ibuprofen(400mg)+paracetamol(325mg))-2.9%,

Imol plus(Ibuprofen (400 mg) + Paracetamol (325 mg) + Caffeine (Anhydrous) (25 mg))-1.9%.

Chi square test was carried out to find the association of treatment done and analgesic prescribed [Figure 4], it also shows the analgesic that is most commonly prescribed in each technique. Zerodol-P was the most commonly prescribed drug in laser frenotomy, scalpel frenectomy and scalpel frenotomy. Zerodol-S was the most commonly prescribed drug post laser frenectomy. However, there was no significant association between the treatment done and the analgesic prescribed (p value >0.05). Chi square test was performed to find the association between gender and analgesic prescribed [Figure 5]. Zerodol-P

(Paracetamol(325mg)+Aceclofenac(100mg)) was the most commonly prescribed analgesic among both males and females. However, there was no significant association between the gender and the analgesic prescribed (p value >0.05).

In this era of periodontal surgery, more precise and conservative techniques are being adopted to create more aesthetic and functional results [38]. The aberrant frenum can be treated by frenectomy or frenotomy procedures. Soft tissue lasers are emerging as a viable alternative to the scalpel in soft tissue surgical procedures [39]. Lasers such as Diode, Er:YAG, Nd:YAG and Co2 have been used for frenectomy procedures. The diode and Co2 lasers are the most frequently used. Decreased pain perception after the use of lasers is attributed to the protein coagulum that is formed on the wound surface, which acts as a biologic dressing and seals the ends of the sensory nerves [40]. The increased pain perception associated with the scalpel frenectomy might be due to the fact that it is a more invasive surgical procedure. In a recent study conducted, subjects treated with laser had

significantly less bleeding and showed better outcomes than scalpel surgery.

Individuals pain experience after either periodontal or any oral surgery parallels analgesic consumption very closely. One of the most important analgesic agents used in dentistry are the para-aminophenol derivative such as paracetamol (acetaminophen). Administration of paracetamol is recommended in mild forms of dental pain only when the other NSAIDs are contraindicated. In general, NSAIDs group of drugs demonstrate higher efficacy in dental pain management and are considered as the main alternative and drug of choice for managing dental pain. However, even though opioid drug groups are relatively more effective, they may be considered when NSAIDs drugs are contraindicated. Different combinations of drugs could be administered for some patients who require adequate pain relief following periodontal surgery.

Zerodol-P

(Paracetamol(325mg)+Aceclofenac(100mg)) is one of the most standard drugs prescribed. It has a high success rate. Aceclofenac has better effects as it interacts with neutrophil adhesion to endothelium showing excellent anti-inflammatory action. The combination of Aceclofenac, Paracetamol and Chlorzoxazone is emerging as one of the most widely prescribed analgesic combinations [41,42]. This study has certain limitations, it involves only a small population and it is a single centred study. Therefore extensive research needs to be performed in this field involving a larger population and a larger geographical location.

The clinician may choose from opioid and non-opioid analgesics, but it is necessary to understand the pharmacological action of each drug prescribed. Proper selection of the analgesic regime based on the type and amount of pain the patient experiences can prevent the level of anxiety and stress associated with postoperative pain. Further extensive research should be done to evaluate the pain level offered by each analgesic.

CONCLUSION

Within the limitations of the present study, Zerodol-P (Paracetamol (325mg) + Aceclofenac(100mg)) was the most commonly prescribed analgesic post scalpel and laser frenectomy and frenotomy. The most common technique adapted was scalpel frenectomy with a higher predilection in females. However, there is a need for further studies with larger sample sizes to establish these facts.

AUTHOR CONTRIBUTIONS

Manya contributed in study concept and manuscript preparation, Dr.Nivethigaa contributed in statistical framework, Dr. Balaji Ganesh S

contributed in manuscript writing and proofreading.

CONFLICTS OF INTEREST

There were no conflicts of interest regarding the publication of this article.

REFERENCES

- Newman MG, Takei HH, Klokkevold PR, Carranza FA. Preface [Internet]. Carranza's Clinical Periodontology. 2012. p. xvi. Available from: <http://dx.doi.org/10.1016/b978-1-4377-0416-7.00109-8>
- Takei HH, Todd Scheyer E, Azzi RR, Allen EP, Han TJ. Periodontal Plastic and Esthetic Surgery [Internet]. Carranza's Clinical Periodontology. 2012. p. 595–600. Available from: <http://dx.doi.org/10.1016/b978-1-4377-0416-7.00063-9>
- Research, Science and Therapy Committee of the American Academy of Periodontology. Lasers in periodontics. J Periodontol. 2002 Oct;73(10):1231–9.
- Loh SA, Carlson GA, Chang EI, Huang E, Palanker D, Gurtner GC. Comparative Healing of Surgical Incisions Created by the PEAK PlasmaBlade, Conventional Electrosurgery, and a Scalpel [Internet]. Vol. 124, Plastic and Reconstructive Surgery. 2009. p. 1849–59. Available from: <http://dx.doi.org/10.1097/prs.0b013e3181bcee87>
- Northcutt ME. The lingual frenum. J Clin Orthod. 2009 Sep;43(9):557–65; quiz 581.
- Devishree, Devishree D. Frenectomy: A Review with the Reports of Surgical Techniques [Internet]. JOURNAL of CLINICAL AND DIAGNOSTIC RESEARCH. 2012. Available from: <http://dx.doi.org/10.7860/jcdr/2012/4089.2572>
- Patel RM, Varma S, Suragimath G, Abbayya K, Zope SA, Kale V. Comparison of labial frenectomy procedure with conventional surgical technique and diode laser [Internet]. Vol. 9, Journal of Dental Lasers. 2015. p. 94. Available from: <http://dx.doi.org/10.4103/0976-2868.170565>
- Lang NP, Lindhe J. Clinical Periodontology and Implant Dentistry, 2 Volume Set. John Wiley & Sons; 2015. 1480 p.
- Malmberg AB, Yaksh TL. Hyperalgesia mediated by spinal glutamate or substance P receptor blocked by spinal cyclooxygenase inhibition. Science. 1992 Aug 28;257(5074):1276–9.
- Stein C. The Control of Pain in Peripheral Tissue by Opioids [Internet]. Vol. 332, New England Journal of Medicine. 1995. p. 1685–90. Available from: <http://dx.doi.org/10.1056/nejm199506223322506>
- Apfelbaum JL, Chen C, Mehta SS, Gan TJ. Postoperative pain experience: results from a national survey suggest postoperative pain continues to be undermanaged. Anesth Analg. 2003 Aug;97(2):534–40, table of contents.
- Mehlich DR. The efficacy of combination analgesic therapy in relieving dental pain. J Am Dent Assoc. 2002 Jul;133(7):861–71.
- Becker DE, Phero JC. Drug therapy in dental practice: nonopioid and opioid analgesics. Anesth Prog. 2005 Winter;52(4):140–9.
- Ramesh A, Varghese SS, Jayakumar ND, Malaiappan S. Chronic obstructive pulmonary disease and periodontitis – unwinding their linking mechanisms [Internet]. Vol. 58, Journal of Oral Biosciences. 2016. p. 23–6. Available from: <http://dx.doi.org/10.1016/j.job.2015.09.001>
- Priyanka S, Kaarthikeyan G, Nadathur JD, Mohanraj A, Kavarthapu A. Detection of cytomegalovirus, Epstein-Barr virus, and Torque Teno virus in subgingival and atheromatous plaques of cardiac patients with chronic periodontitis. J Indian Soc Periodontol. 2017 Nov;21(6):456–60.
- Avinash K, Malaippan S, Dooraiswamy JN. Methods of Isolation and Characterization of Stem Cells from Different Regions of Oral Cavity Using Markers: A Systematic Review. Int J Stem Cells. 2017 May 30;10(1):12–20.
- Kavarthapu A, Thamaraiselvan M. Assessing the variation in course and position of inferior alveolar nerve among south Indian population: A cone beam computed tomographic study. Indian J Dent Res. 2018 Jul;29(4):405–9.
- Rajeshkumar S, Kumar SV, Ramaiah A, Agarwal H, Lakshmi T, Roopan SM. Biosynthesis of zinc oxide nanoparticles using *Mangifera indica* leaves and evaluation of their antioxidant and cytotoxic properties in lung cancer (A549) cells. Enzyme Microb Technol. 2018 Oct;117:91–5.
- Kavitha M, Subramanian R, Narayanan R, Udhayabanu V. Solution combustion synthesis and characterization of strontium substituted hydroxyapatite nanocrystals [Internet]. Vol. 253, Powder Technology. 2014. p. 129–37. Available from: <http://dx.doi.org/10.1016/j.powtec.2013.10.045>
- Vijayakumar GNS, Nixon Samuel Vijayakumar G, Devashankar S, Rathnakumari M, Sureshkumar P. Synthesis of electrospun ZnO/CuO nanocomposite fibers and their

- dielectric and non-linear optic studies [Internet]. Vol. 507, Journal of Alloys and Compounds. 2010. p. 225–9. Available from: <http://dx.doi.org/10.1016/j.jallcom.2010.07.161>
21. Danda AK. Comparison of a single noncompression miniplate versus 2 noncompression miniplates in the treatment of mandibular angle fractures: a prospective, randomized clinical trial. *J Oral Maxillofac Surg.* 2010 Jul;68(7):1565–7.
 22. Lekha L, Kanmani Raja K, Rajagopal G, Easwaramoorthy D. Synthesis, spectroscopic characterization and antibacterial studies of lanthanide(III) Schiff base complexes containing N, O donor atoms [Internet]. Vols. 1056-1057, Journal of Molecular Structure. 2014. p. 307–13. Available from: <http://dx.doi.org/10.1016/j.molstruc.2013.1.0.014>
 23. Putchala MC, Ramani P, Herald J, Sherlin, Premkumar P, Natesan A. Ascorbic acid and its pro-oxidant activity as a therapy for tumours of oral cavity – A systematic review [Internet]. Vol. 58, Archives of Oral Biology. 2013. p. 563–74. Available from: <http://dx.doi.org/10.1016/j.archoralbio.2013.01.016>
 24. Devi VS, Subathra Devi V, Gnanavel BK. Properties of Concrete Manufactured Using Steel Slag [Internet]. Vol. 97, Procedia Engineering. 2014. p. 95–104. Available from: <http://dx.doi.org/10.1016/j.proeng.2014.12.229>
 25. Dhinesh B, Niruban Bharathi R, Isaac JoshuaRamesh Lalvani J, Parthasarathy M, Annamalai K. An experimental analysis on the influence of fuel borne additives on the single cylinder diesel engine powered by Cymbopogon flexuosus biofuel [Internet]. Vol. 90, Journal of the Energy Institute. 2017. p. 634–45. Available from: <http://dx.doi.org/10.1016/j.joei.2016.04.010>
 26. Danda AK, Tatiparthi MK, Narayanan V, Siddareddi A. Influence of Primary and Secondary Closure of Surgical Wound After Impacted Mandibular Third Molar Removal on Postoperative Pain and Swelling—A Comparative and Split Mouth Study [Internet]. Vol. 68, Journal of Oral and Maxillofacial Surgery. 2010. p. 309–12. Available from: <http://dx.doi.org/10.1016/j.joms.2009.04.060>
 27. Gopalakannan S, Senthilvelan T, Ranganathan S. Modeling and Optimization of EDM Process Parameters on Machining of Al 7075-B4C MMC Using RSM [Internet]. Vol. 38, Procedia Engineering. 2012. p. 685–90. Available from: <http://dx.doi.org/10.1016/j.proeng.2012.06.086>
 28. Venu H, Dhana Raju V, Subramani L. Combined effect of influence of nano additives, combustion chamber geometry and injection timing in a DI diesel engine fuelled with ternary (diesel-biodiesel-ethanol) blends [Internet]. Vol. 174, Energy. 2019. p. 386–406. Available from: <http://dx.doi.org/10.1016/j.energy.2019.02.163>
 29. Adalarasan R, Santhanakumar M, Rajmohan M. Application of Grey Taguchi-based response surface methodology (GT-RSM) for optimizing the plasma arc cutting parameters of 304L stainless steel [Internet]. Vol. 78, The International Journal of Advanced Manufacturing Technology. 2015. p. 1161–70. Available from: <http://dx.doi.org/10.1007/s00170-014-6744-0>
 30. Parthasarathy M, Isaac JoshuaRamesh Lalvani J, Dhinesh B, Annamalai K. Effect of hydrogen on ethanol-biodiesel blend on performance and emission characteristics of a direct injection diesel engine. *Ecotoxicol Environ Saf.* 2016 Dec;134(Pt 2):433–9.
 31. Neelakantan P, Cheng CQ, Mohanraj R, Sriraman P, Subbarao C, Sharma S. Antibiofilm activity of three irrigation protocols activated by ultrasonic, diode laser or Er:YAG laserin vitro [Internet]. Vol. 48, International Endodontic Journal. 2015. p. 602–10. Available from: <http://dx.doi.org/10.1111/iej.12354>
 32. Sajjan D, Udaya Lakshmi K, Erdogdu Y, Joe IH. Molecular structure and vibrational spectra of 2,6-bis(benzylidene)cyclohexanone: a density functional theoretical study. *Spectrochim Acta A Mol Biomol Spectrosc.* 2011 Jan;78(1):113–21.
 33. Sharma P, Mehta M, Dhanjal DS, Kaur S, Gupta G, Singh H, et al. Emerging trends in the novel drug delivery approaches for the treatment of lung cancer. *Chem Biol Interact.* 2019 Aug 25;309:108720.
 34. Ranganathan H, Ganapathy DM, Jain AR. Cervical and Incisal Marginal Discrepancy in Ceramic Laminate Veneering Materials: A SEM Analysis. *Contemp Clin Dent.* 2017 Apr;8(2):272–8.
 35. Lekha L, Kanmani Raja K, Rajagopal G, Easwaramoorthy D. Schiff base complexes of rare earth metal ions: Synthesis, characterization and catalytic activity for the oxidation of aniline and substituted anilines [Internet]. Vol. 753, Journal of Organometallic Chemistry. 2014. p. 72–80. Available from: <http://dx.doi.org/10.1016/j.jorganchem.2014.04.010>

- 3.12.014
36. Neelakantan P, Grotra D, Sharma S. Retreatability of 2 mineral trioxide aggregate-based root canal sealers: a cone-beam computed tomography analysis. *J Endod.* 2013 Jul;39(7):893-6.
 37. PradeepKumar AR, Shemesh H, Jothilatha S, Vijayabharathi R, Jayalakshmi S, Kishen A. Diagnosis of Vertical Root Fractures in Restored Endodontically Treated Teeth: A Time-dependent Retrospective Cohort Study. *J Endod.* 2016 Aug;42(8):1175-80.
 38. Seymour RA, Blair GS, Wyatt FAR. Post-operative dental pain and analgesic efficacy Part II Analgesic usage and efficacy after dental surgery [Internet]. Vol. 21, *British Journal of Oral Surgery.* 1983. p. 298-303. Available from: [http://dx.doi.org/10.1016/0007-117x\(83\)90018-5](http://dx.doi.org/10.1016/0007-117x(83)90018-5)
 39. Fiorotti RC, Bertolini MM, Nicola JH, Nicola EMD. Early lingual frenectomy assisted by CO2 laser helps prevention and treatment of functional alterations caused by ankyloglossia. *Int J Orofacial Myology.* 2004 Nov;30:64-71.
 40. Pick RM, Colvard MD. Current status of lasers in soft tissue dental surgery. *J Periodontol.* 1993 Jul;64(7):589-602.
 41. Saraf S, Garg G, Saraf S. Simultaneous estimation of aceclofenac, paracetamol and chlorzoxazone in tablets [Internet]. Vol. 69, *Indian Journal of Pharmaceutical Sciences.* 2007. p. 692. Available from: <http://dx.doi.org/10.4103/0250-474x.38481>
 42. Joshi D, Garg T, Goyal AK, Rath G. Advanced drug delivery approaches against periodontitis [Internet]. Vol. 23, *Drug Delivery.* 2016. p. 363-77. Available from: <http://dx.doi.org/10.3109/10717544.2014.935531>

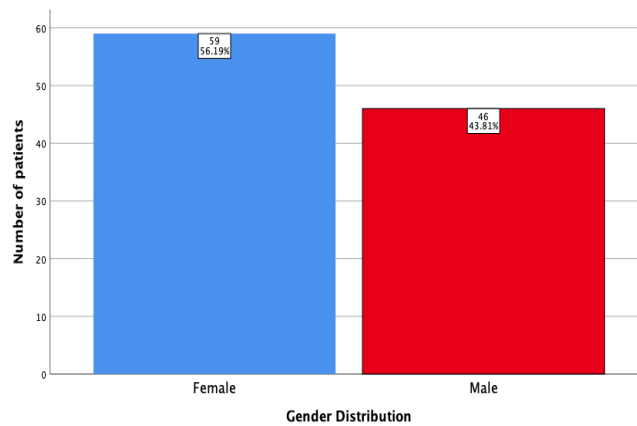


Figure 1: Bar chart showing the gender distribution of patients who underwent scalpel/laser frenectomy and frenotomy. X axis represents the gender distribution. Y axis represents the number of patients undergoing scalpel/laser frenectomy and frenotomy. The population consisted of females-56.19% and males-43.81% represented as blue and red graphs respectively.

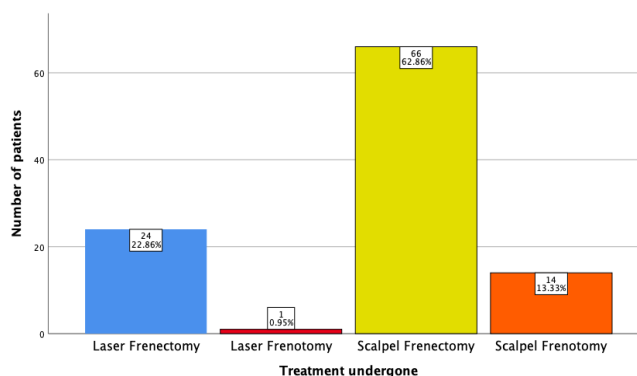


Figure 2: Bar chart showing the percentage of the adopted techniques (Laser and scalpel frenectomy/frenotomy). X axis represents the treatment undergone and Y axis represents the number of patients who underwent treatment. 22.86% patients underwent laser frenectomy (blue bar), 1% patient underwent laser frenotomy (red bar), 62.86% patients underwent scalpel frenectomy (yellow bar) and 13.33% patients underwent scalpel frenotomy (orange bar).

Comparative Analysis of Commonly Prescribed Analgesics After Frenectomy And Frenotomy with Scalpel and Laser

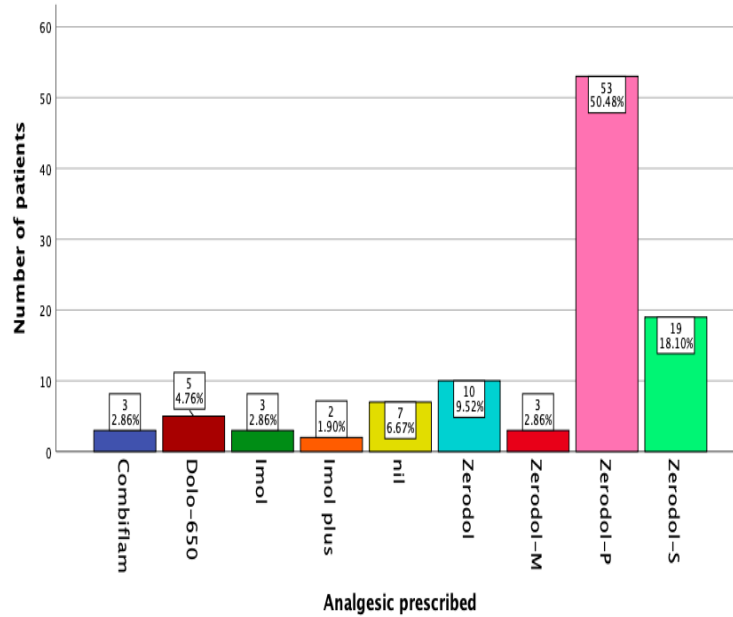


Figure 3: Bar chart shows the overall frequency of different analgesics prescribed. X axis represents the analgesics prescribed and Y axis represents the number of patients. Combiflam (Paracetamol (325mg) + Ibuprofen (400mg)) - 2.86% (Blue bar), Zerodol - 100mg (Aceclofenac) - 9.52% (Teal Bar), Zerodol-P (Paracetamol (325mg) + Aceclofenac (100mg)) - 50.48% (Light Pink Bar), Zerodol-S (Aceclofenac (100mg) + Serratiopeptidase (15mg)) -18.10% (Light Green Bar), Zerodol-M (Aceclofenac (100mg) + Tizanidine (2mg)) - 2.86% (Red Bar), Dolo-650mg (Paracetamol-650) - 4.76% (Maroon Bar), Imol (Ibuprofen (400mg) + paracetamol (325mg)) -2.86% (Dark Green Bar), Imol plus (Ibuprofen (400 mg) + Paracetamol (325 mg) + Caffeine (Anhydrous) (25 mg)) - 1.90% (Orange Bar).

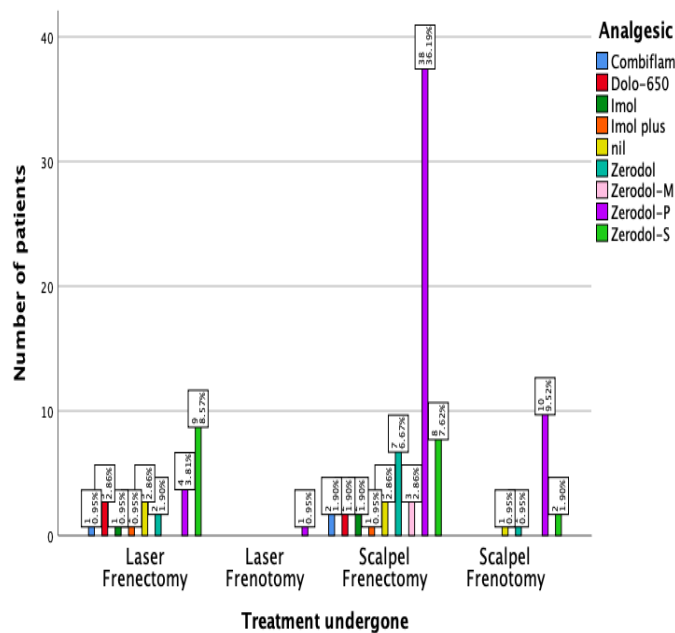


Figure 4: Bar chart shows the association between treatment undergone and analgesic prescribed. X axis represents the treatment undergone and Y axis represents the number of patients. Zerodol-P (Purple bar) was the most commonly prescribed drug in laser frenotomy, scalpel frenectomy and scalpel frenotomy. Zerodol-S (green bar) was the most commonly prescribed drug post laser frenectomy. However, there was no significant association between the type of treatment and the prescribed analgesics. Pearson Chi Square value=30.607, p value =0.288 (>0.05).

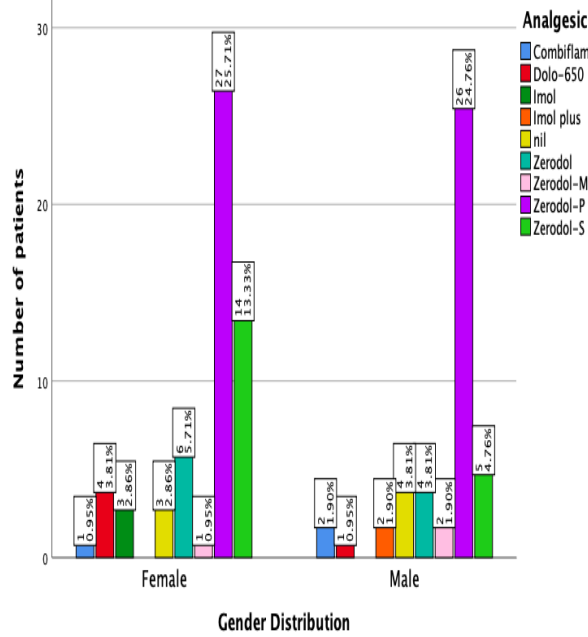


Figure 5: Bar chart shows the association between the gender and the analgesic prescribed. X axis represents the gender distribution and Y axis represents the number of patients. Zerodol-P was the most commonly prescribed drug among both the males and females (Purple bar). However, there was no significant association between the gender and the prescribed analgesics. Pearson Chi Square value =12.057, p value = 0.210 (>0.05).