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EVALUATION OF CLINICAL EFFICACY OF TWO TYPES OF PRESCRIPTION IN NONSURGICAL MANAGEMENT OF PERICORONITIS OF MANDIBULAR THIRD MOLARS

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ABSTRACT

Introduction: Pericoronitis is a common oral inflammatory pathology affecting the pericoronal tissues of unerrupted or partially erupted tooth. It is more commonly associated with mandibular third molars. These patients are treated with systemic antibiotics and pain killers along with salt water gargling or betadine gargle. The aim of this study was to compare the clinical efficacy of two different types of prescriptions where in prescription 1 included systemic penicillin + systemic metronidazole +pain killer and prescription 2 included systemic penicillin + topical metronidazole (metrohex oral gel by dr reddys lab) + pain killer was studied. **Materials and methods:** Patients were divided into two groups. Group 1 were adviced prescription 1 and group 2 who were adviced prescription 2. Both groups included 50 patients each and diagnosed as acute pericoronitis. Every subject was evaluated on day 3 and day 5 and data was entered in a proforma. Both subjective and objective findings were recorded. Subjective parameters

included pain, pus discharge. Objective parameters included swelling, mouth opening and bleeding on probing. Recurrence rate for both the groups were evaluated for over a period of 6 months. All the subjects included in the study had acute pericoronitis of unerupted mandibular 3rd molars. **Results:** Time taken to resolve the symptoms was lesser with group 2 patients who were prescribed prescription 2 when compared with group 1 patients who were prescribed prescription1 suggesting that 2nd type of prescription was more effective clinially providing faster resolution of symptoms and also reducing the time taken for relief.

KEY WORDS: pericoronitis, metronidazole, topical, gel.

INTRODUCTION

Pericoronitis is one of the common oral inflammatory condition associated with unerupted teeth and commonly with unerupted mandibular third molar tooth. As per our experience in day to day practice pericoronitis ranks second after pain associated with dental caries. When there is a partially erupted tooth covered by pricoronal flap or operculum, food often gets lodged under the operculum which results in its inflammation and pain and abscess formation followed by extra oral swelling too. Maintenance of oral hygiene around the partially erupted tooth is very difficult and hence commonly gets infected. Retaining or extracting the tooth depends on few factors like age of patient and status of eruption of tooth. Many patients become apprehensive when asked to get the tooth extracted and hence seek pain management only. This was an observational study done to evaluate the efficacy of two types of prescription given to patients attending the OPD.

Anaerobic bacteria is very prevalent in pericoronitis and hence antianaerobics becomes mandatory in third molar infections. Topical drug delivering is more efficient than systemic application in terms local availability of drug.[1] The role of topical metronidazole was assessed in these cases.

Aim

To evaluate the clinical efficacy of two types of prescription in reducing the signs and symptoms of pericoronitis.

METHODOLOGY

This was an observational study done at the department of Oral Medicine and Radiology. It compared the clinical efficacy of two different types of prescription in the nonsurgical management of pericoronitis associated with partially erupted mandibular third molars.

Drugs prescribed were as follows:

Prescription 1: amoxicillin 500mg + metronidazole 400mg + paracetamol 500mg for 5 days.

Prescription 2: amoxicillin 500mg + paracetamol 500mg + topical metronidazole gel for 5 days.

All 100 patients included in the study were in the acute stage of pericoronitis, and the patients included in the study were seeking only pharmacological management of pericoronitis, since they were apprehensive of surgical removal of teeth. Patients were randomly selected irrespective of age and evaluated subjectively and objectively for Pain, Swelling (extra oral and intra oral that refers to swelling of pericoronal flap or operculum), Bleeding on probing, Mouth opening, Recurrence rate of pericoronitis over a period of 6 months.

Patients were divided into two groups. Group A and group B. Group A had 50 patients who were prescribed prescription 1. Group B had 50 patients who were prescribed prescription 2. Clinical parameters studied to evaluate the clinical efficacy of both the prescriptions included: pain using visual analog scale, mouth opening using the 3 finger opening method, bleeding on probing using Loe and sillness gingival index[2], swelling based on inspectory findings, pus discharge based on subjective findings like asking for change of taste, salty taste or as pus discharge. Patients were followed utpo 6 months for any recurrence since surgical removal was required in these cases. From the day of reporting, all these patients were recalled on day 3 and day 5 day for assessment and all findings were recorded.

Exclusion criteria included:

Pregnant ladies and lactating mothers

Medically compromised patients

RESULTS

Table 1: tabulation of relief of symptoms by day 3 and day 5 in group 1 and 2 according to the parameters assessed.

Sl no	Parameters assessed	Group 1 (50 patients)		Group 2 (50 patients)	
		Relief of symptoms by Day 3	Relief of symptoms by Day 5	Relief of symptoms by Day 3	Relief of symptoms by Day 5
1.	Pain	16	34	50	0
2.	Swelling	10	40	42	8
3	Pus discharge	20	30	50	0

4	Bleeding on probing	5	45	48	2
6	Mouth opening	10	40	45	5
7	Recurrence	20 reported with recurrence		None reported	

Stastistical analysis was done using SPSS software. ANOVA was used for comparative analysis between the two groups.

In this study that included 100 patients, 82 were females and 18 were males. Age range was from 18- 35 years of age. All these patients were assessed on day 3 and day 5 for pain, swelling, pus discharge, bleeding on probing, recurrence rate over a period of 6 months.

Assessment of pain: (table 1, graph 1)

In group 1, 16 (32%) out of 50 patients had relief of pain by day 3 where as in group 2 total 50 patients were relieved of pain. The remaining 34 patients of group 1 were completely relieved on day 5 (68%).

Assessment of swelling: (graph 2, table 1)

In group 1, 10 patients were relieved of swelling on day 3 and rest 40 patients on day 5. In group 2, 42 patients were relieved of swelling on day 3 and rest 8 on day 5.

Assessment of pus discharge: (graph 3, table 1)

In group 1, 20 (40%) patients had reduction in pus discharge by day 3 and rest 30 (60%) on day 5. In group 2 entire 50 patients (100%) patients had reduction in pus discharge on day 3.

Reduction in bleeding on probing: (graph 4, table 1)

Bleeding on probing was assessed by Loe and Sillness gingival index[2]. In group 1, 5 patients (10%) had reduction in bleeding on probing by day 3 and rest 45 (90%) on day 5. In group 2, 48 patients (96%) had reduced bleeding on probing by day 3 and rest 2 (4%) on day 5.

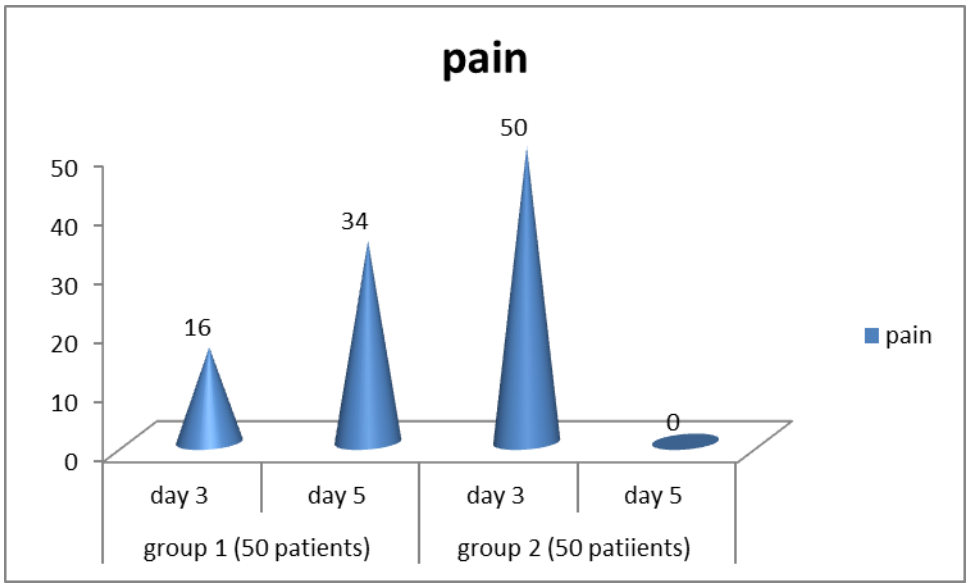
Improvement in mouth opening: (graph 5, table 1)

Mouth opening was assessed by 3 finger method. Patients who had reduced mouth opening had mouth opening less than 3 fingers width. In group 1, 10 patients (20%) showed improvement in mouth opening on day 3 and rest 40 (80%) on day 5. In group 2, 45 patients (90%) had improved mouth opening on day 3 and rest 5 (10%) patients on day 5.

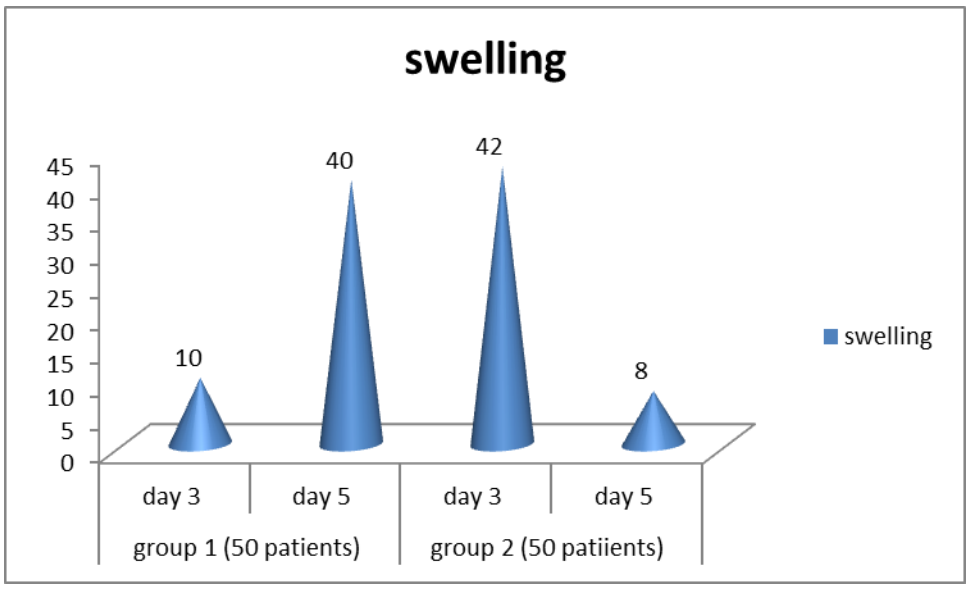
Recurrence rate

All patients were called after 6 months and asked for recurrent pericoronitis. In group 1, 20 complained of recurrence and group 2 had no recurrence over a period of 6 months.

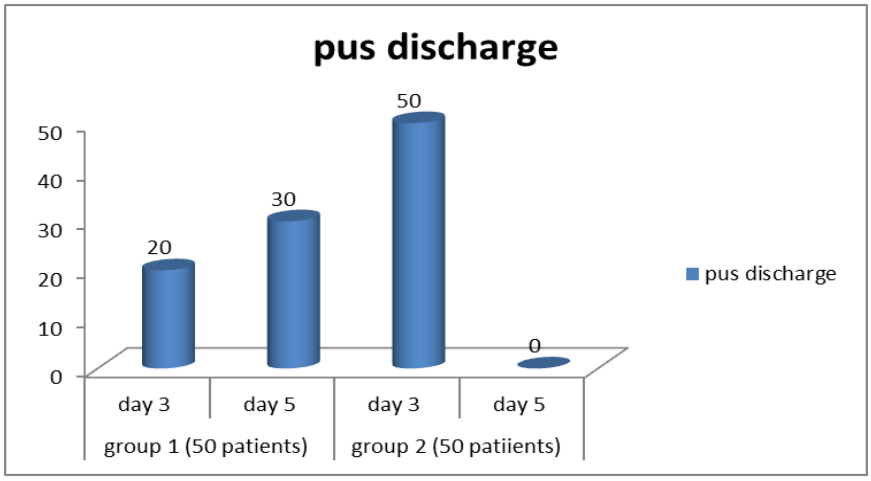
Comparative analysis of all parameters in both the groups using ANOVA on day 5 had a x^2 value of 12.8 and a p value of 0.012 (s).



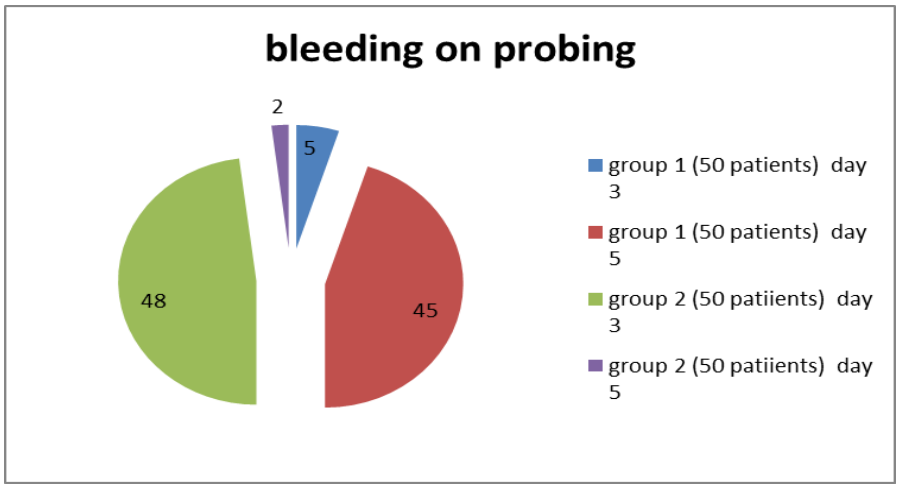
Graph 1: graphical representation of pain relieved by day 3 and day 5 in both groups.



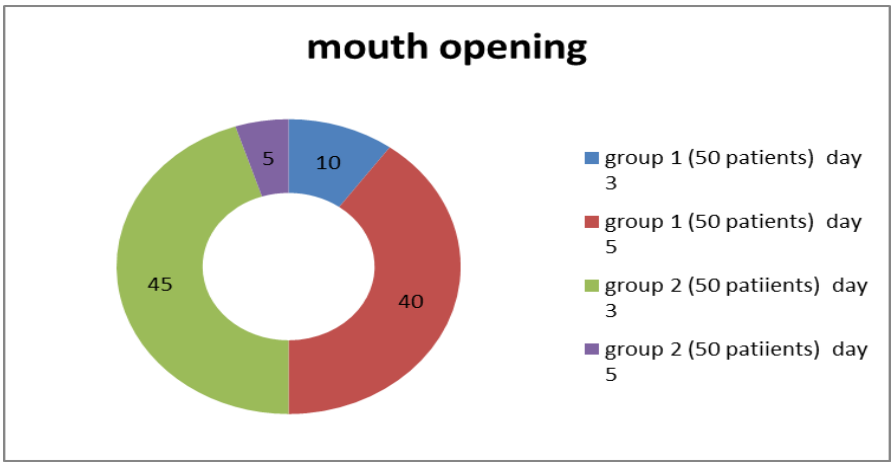
Graph 2: graphical representation of relief of swelling by day 3 and day 5 in both groups.



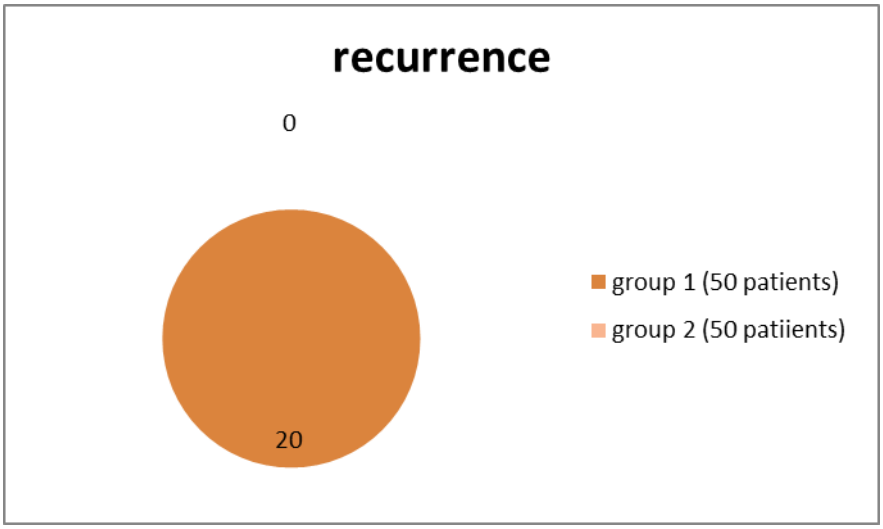
Graph 3: graphical representation of reduction in pus discharge by day 3 and day 5 in both groups.



Graph 4: graphical representation of reduction in bleeding on probing by day 3 and day 5 in both groups.



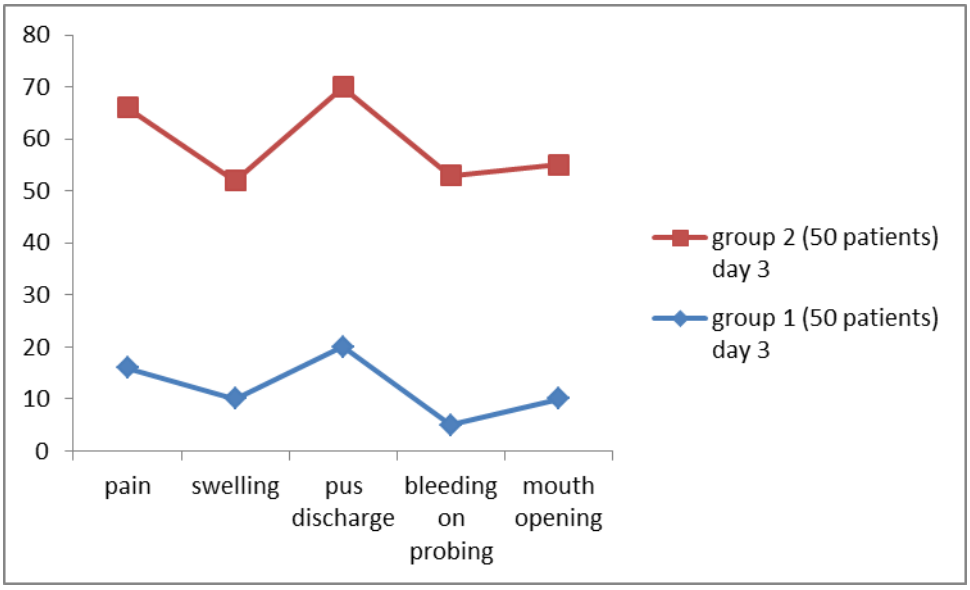
Graph 5: graphical representation of improved mouth opening by day 3 and day 5 in both groups.



Graph 6: graphical representation of recurrence reported over a period of 6 months in both groups.

Table 2: comparative analysis of all parameters in both groups on day 3.

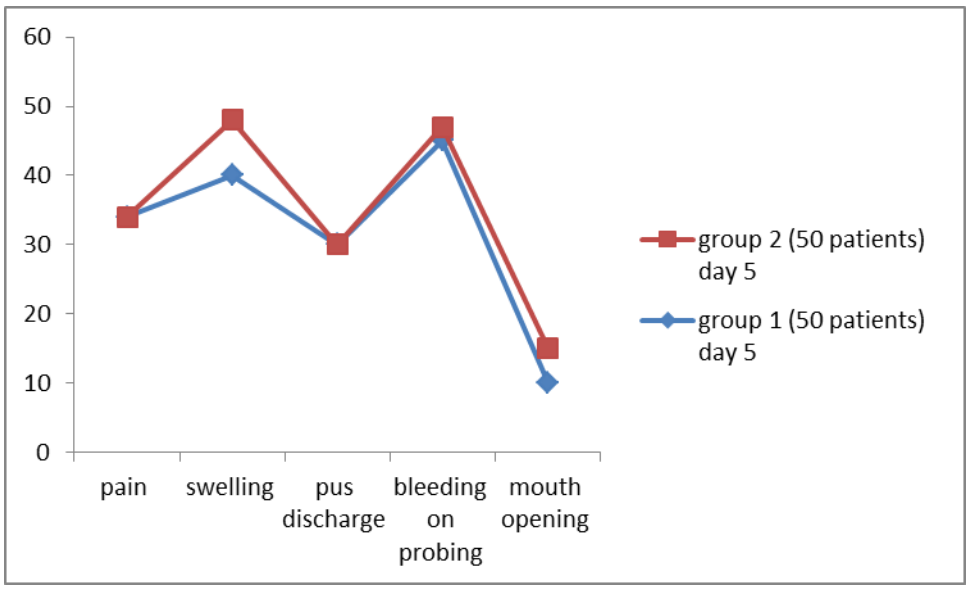
parameter assessed	group 1 (50 patients)	group 2 (50 patients)
	day 3	day 3
pain	16	50
swelling	10	42
pus discharge	20	50
bleeding on probing	5	48
mouth opening	10	45



Graph 7: comparative analysis of all parameters of both the groups on day 3.

Table 3: comparative analysis of all parameters of both the groups on day 5.

parameter assessed	group 1 (50 patients)	group 2 (50 patients)
	day 5	day 5
pain	34	0
swelling	40	8
pus discharge	30	0
bleeding on probing	45	2
mouth opening	10	5



Graph 8: comparative analysis of all parameters of both the groups on day 5.

DISCUSSION

Pericoronitis can be acute or chronic. Acute is of short duration but with severe symptoms. most commonly seen with impacted mandibular 3rd molars. Patient usually reports with reduced mouth opening of short duration, associated with swollen gums in the posterior region and also associated with bad taste, difficulty in swallowing food, bleeding and pain in throat.

Pain radiates to ear, throat, head. Most of these patients could 1st visit an ENT surgeon (usually true in cases of chronic pericoronitis) who are later referred to a dental surgeon for evaluation.

In cases of chronic pericoronitis patients might be having pain / clicking of TMJ / restricted mouth opening (although asymptomatic) for long duration.[2,3] Cases of acute pericoronitis if not treated could be life threatening. Such patients have a swelling at the ramus angle region

and if left untreated involves masticatory spaces and then the neck spaces resulting in cellulitis.

Patients who come to us with pericoronitis would have experienced it for the 1st time or sufferred 2-3 times over a period of 2-3 years. Unfavorable oral hygiene is the predominent predisposing factor. Food lodgement under the pericoronal tissues leads to inflammatin of pericoronal tissues and hence swelling, pain, bleeding and secondary manifestation like fever and lymphadenopathy.

Microbiology of pericoronitis has mostly anerobic microbial flora[4,5] along with aerobic organisms.[6,7] Metronidazole remains the drug of choice for these anerobic organisms along with penicilins for aerobic organisms. This study compared the efficacy of two types of prescriptions to resolve the clinical symptoms of acute pericoronitis. Group 1 patients who had systemic penicillins, metronidazole (400mg) along with a analgesic and group 2 had systemic penicillins along with a analgesic but topical metronidazole was used. This topical metronidazole (metrohex oral gel:contains cholrhexidine gluconate topical 0.25%, metronidazole topical 1%) was applied locally for 10 minutes with the help of a gauge pad onto affected area for 10 min, 3 times in a day for as long as symptoms disappear.

Assessment of pain by VAS score,[8] reduction in swelling, decrease in pus discharge, reduction in bleeding on probing and improvement in mouth opening showed group 2 patients benefetting over group 1 patients specially when assessed on day 5. Although the comparative analysis for both groups on day 3 by ANOVA has a non significant p value, but it was significant on day 5 with a p value of 0.012.

100% of patients of group 2 had complete relief of pain and pus discharge by day 3 when compared with group 1. 96 %had reduction in bleeding on probing, 90% showed improved mouth opening in group 2 patients. This showed topical metronidazole has better effect when clubbed with systemic penicillin. No doubt systemic penicillins along with systemic metronidazole almost relieved the symptoms but the recovery speed /time taken to relive the symptoms were much less and significant with group 2 who used topical metronidazole.

Since the microbial flora of pericoronitis has increased prevalence of gram negative bacteria along with gram positive bacteria and metroniazole is effective against gram negtive bacteria, hence this drug is a must for pericoronitis along with penicilin. Time taken for the drug to

reach site of action with topical medicine is believed to less then systemic drug which undergoes complex biochemical reaction before reaching the site of action.

All the patiemts were asked to review after 6 months and were adviced to maintain oral hygiene specially in relation to pericoronal tissues of impacted mandibular third molars and adviced to brush twice daily and gargle after every meal. Only 40% of group 1 patients had recurrence where as none of the group 2 patients had recurrence.

Hence topical metronidazole along with systemic penicillin has better effect than drug combination of systemic penicillin and metronidazole.

CONCLUSION

In our observational study, patients who were treated with type 2 of prescription (sys penicillin + topical metro+ analgesic had faster relief of symptoms or the time taken to resolve the acute phase of pericoronitis was lesser than patients who were on systemic penicillin + sys metronidazole + pain killer. This suggests topical application of meronidazole is beneficial in getting rid of anerobic environment of preicoronitis at a rapid rate and hence the signs and symptoms. Hence we suggest use of topical metronidazole along with any systemic penicillin and pain killer.

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