



3 Mix-MP: Single Treatment Provides Alternative to Extraction

3Mix-MP is an endodontic treatment using a combination of the antibacterial drugs metronidazole, minocycline and ciprofloxacin (3Mix), and macrogol and propylene glycol (MP) under the concept of Lesion Sterilization and Tissue Repair (LSTR) therapy. **In primary teeth, this preparation allows the dentist to do a pulpotomy instead of extracting the tooth.**

3 Mix-MP has also been used to successful disinfect immature permanent teeth. In one study of 991 teeth, 98% of cases were treated successfully, defined as disappearance of acute or chronic clinical symptoms, such as fistulae, abscess formation, purulent exudates, swelling or bite pain, and partial or full recovery of radiolucent periradicular lesions (if present at initiation of therapy). On the first visit, the orifice of the root canal was enlarged and 3 Mix-MP was placed and sealed with glass ionomer cement. During the next visit, the disinfected root canal was prepared, filled with gutta-percha, and sealed. In some cases, only medication was given without any other endodontic procedures (non-instrumentation endodontic treatment: NIET) and therapy was clinically successful.¹

When Ca(OH)₂ is combined with 3 Mix-MP and used as an intracanal medicament in necrotic immature permanent teeth, the therapy can help promote further development of the pulp-dentin complex. A retrospective study showed regenerative endodontic treatment with 3 Mix-MP and calcium hydroxide [Ca(OH)₂] produced significantly greater increases in root length than either the mineral trioxide aggregate (MTA) apexification or nonsurgical root canal treatment (NSRCT) control groups. The triple antibiotic paste also produced significantly greater differences in root wall thickness than either the Ca(OH)₂ or formocresol groups.² MTA and ("triple antibiotic paste") can be used clinically in the treatment of an unsuccessfully resected tooth associated with a large periradicular lesion.³

Case Report:

An 8-year-old girl presented for the evaluation of right and left maxillary central incisors with crown fractures and luxation. The right central incisor had a large periapical lesion, which was treated by filling the canal with a ciprofloxacin/metronidazole/minocycline paste. After 4 months, the patient had no symptoms, and a radiograph showed the radiolucency had completely resolved. At the 1-year follow-up, a periapical radiograph showed complete root development and apical closure. These results indicate that triple antibiotic paste (3 Mix-MP) is effective in disinfecting immature permanent teeth with periapical lesions.⁴

Directions:

Combine 1 IRM-size scoop of 3 Mix (triple antibiotic) powder and 1 drop of MP liquid on a mixing pad prior to use.

For a primary tooth, do pulpotomy without extirpating pulp canals.

Flush with chlorhexidine.

Place 3 Mix-MP at the bottom of the pulp chamber.

Place protective base such as glass ionomer cement, followed by the restoration of choice.

For a permanent tooth, if the apex is not closed (immature tooth), the 3 Mix-MP can be placed in the canal without removing the nerve (or after the nerve has been removed).

The root canal can be completed when a radiograph shows that the apex has closed.

¹ http://iadr.confex.com/iadr/2005Balt/techprogram/abstract_60499.htm

² J Endod. 2009 Oct;35(10):1343-9.

³ J Endod. 2009 Nov;35(11):1603-6.

⁴ Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2009 Aug;108(2):e62-5

Please call Moses Lake Professional Pharmacy for more information.

3-Mix-MP Therapy

Medication:

Metronidazole, Ciprofloxacin, & Minocycline & MP liquid.

Use:

An alternative to Extraction of Abscessed Teeth, and Lesion Sterilization and Tissue Repair Therapy.

3-Mix-MP is a disinfecting procedure using three antibiotics. It is for cavity and endodontic treatments of necrotic or abscessed teeth. It is especially effective to avoid removing the nerve. **3-Mix-MP allows us to save the nerve, thus prolonging the life of the tooth and disinfecting the root of the tooth.**

3-Mix-MP is an effective and long-lasting cavity treatment, utilizing three antibiotics: metronidazole, minocycline and ciprofloxacin. The antibiotics are mixed with macrogol (M) and propylene glycol (P). Metronidazole is the first choice because of its wide bactericidal spectrum against anaerobes. Ciprofloxacin is a broad-spectrum anti-infective agent active against aerobic gram-negative organisms. Minocycline is a long acting antibiotic active against both gram-negative and gram-positive organisms. **The MP liquid is an excellent vehicle to carry the 3-Mix into the entire dentin and through the dentinal tubules to kill all the bacteria in lesions.**

Unlike other cavity treatments, 3Mix-MP does not require the dentist to grind a tooth. As a result, a treatment is less painful. In some cases no anesthesia is required. **Because an infected tooth is disinfected, there is a higher possibility that we can avoid removing the nerve, even if the cavity is in an advanced stage. 3Mix-MP promotes the remineralization of dental dentin by disinfecting infected dentin.**

Directions:

This one time treatment serves as an alternative to extraction of teeth.

Mix 1 drop of MP liquid and 1 IRM scoop of powder (.20gms-.28gms) on a mixing pad to IRM consistency (the mixture does not set).

Do pulpotomy with #8 round bur without extirpating pulp canals.

Flush with chlorhexidine, (Peridex) using a 3ml syringe.

Place mixture at the bottom of the pulp chamber.

Place restoration such as glass-ionomer cement protective base, followed by the restoration of choice.

This is a one time treatment.

3 Mix Powder & MP liquid

Takushige T, Cruz EV, et al. Endodontic Treatment of Primary Teeth Using A Combination of Antibacterial drugs. *Int Endo J* 2004; 37 (February): 132-138.

Nakahara H, Clinical Evaluation of LSTR 3Mix-MP Endodontic Treatment. Miyagi National Hospital, Japan.

For any questions, either talk to your healthcare provider or your pharmacist.

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