

# LSTR 3mix-MP Important Efficacy Particularly Antibacterial and Periapical Lesions during Conservative Treatment in the Dentistry like RCT and Others Endodontics Management: Case Studies

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## Abstract

Local sterilization and tissue repair which generally termed as LSTR, brings a radical change in the field of conservative dentistry. Efficacy against antibacterial environment and non-surgical healing of periapical lesions much better than calcium hydroxide. LSTR 3Mix-MP, Using an antibacterial drug combination, therapy is a novel caries, pulpal treatment of primary tooth and root canal treatment. LSTR 3Mix-MP aims to eliminate causative bacteria from lesions and after sterilization, the host's natural tissue recovery process usually the lesions are repaired or resolved. LSTR 3Mix MP where TAP (triple antibiotics paste) such as: Metronidazole, Ciprofloxacin, Minocycline and Vehicle MP Macrogol/polyethylene glycol and propylene glycol used to prepare. TAP has great antibacterial efficacy particularly against enterococci which remains after successful root canal treatment, effective eradication of the causative microorganisms during root canal treatment procedures. Residual infection in Root canal therapy has always been an area of interdermind or vague for a treating dental surgeon. Lesion sterilization and tissue repair (LSTR) therapy is a non-surgical or non-conventional endodontic treatment procedure that involves non-instrumentation or minimal instrumentation followed by placement of a triple antibiotic paste in a medication along with Macrogol and Propylene glycol.

**Keywords:** LSTR, 3mix, Macrogol, Propylene glycol, Endodontics, Conservative dentistry, Antibiotics, Antibacterial, RCT, Periapical lesions, Primary tooth, Root resorption

## Introduction

LSTR like calcium and other medicaments very much effective against periapical lesions which even leads to periapical cyst, osteomyelitis and cellulitis.

Involves non-instrumentation or minimal instrumentation followed by placement of a triple antibiotic paste in a medication along with Macrogol and Propylene glycol.

## Materials and Methods

Modern dentistry emphasizes prevention and reversal of the diseases. Endodontics disease like periapical lesions, cyst usually recurrently effects, many studies and clinical researches have been directed finding a valuable ways to minimize such reversal of diseases.

## Study Techniques or Procedure

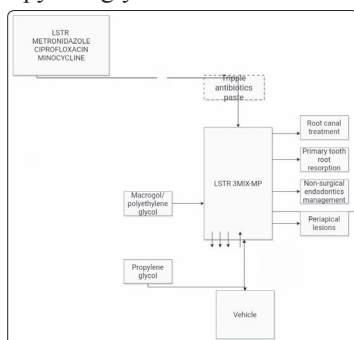
### Patients and Teeth Involved in this Study

Forty-eight teeth from 50 patients, 7-49 years old, visited at AR dental care and N oral health and dental care in banasree, dhaka, Bnagladesh between the years of 2015 to 2018, were included in this study.

## Clinical and Radiographic Observations

Clinical sign/symptoms, such as swelling, abscess, sinus tract, trigger pain on cold and hot conditions, pain on bite, spontaneous pain, were recorded before and after the treatment. Preoperative radiographs were taken prior to treatment to observe conditions of the tooth including the pulp chambers and periodontium. Postoperative radiographs were also taken to observe radiographic changes in periapical lesions.

In vivo, last 3 years almost 50 patients under LSTR treatment having periapical lesions with Radiograph showing amazing improvement.



During treatment procedure as a medicaments and during obturation also with sealer.

**Results**

Based on Radiograph and patients clinical manifestations in vivo, LSTR working very effectively. Disinfection of the canal, Revascularization and eradicate lesions around the apex. In study, 48 out of 50 patients showed improvement in symptoms after application of LSTR. After treatment, gingival swelling and fistulae disappeared along with pain and teeth functioned normally. Lesion sterilization and tissue repair (LSTR) therapy” employs the use of a combination of antibacterial drugs (metronidazole, ciprofloxacin, and minocycline) and Macrogol and propylene glycol for the disinfection of oral infectious lesions, including dentinal, pulpal and periradicular lesions.

**Discussion**

The Cariology Research Unit of the Niigata University School of Dentistry has developed the concept of ‘Lesion Sterilization and Tissue Repair (LSTR)’ therapy that uses (TAP) a triple antibiotic paste of ciprofloxacin, metronidazole, and minocycline, for disinfection of oral infectious lesions, including dentinal, pulpal, and Periapical lesions. Repair of damaged tissues can be expected if lesions are eradicate, but the bacteria, which remain in the deep layers of root canal dentin, may leak out to periapical region and cause complications. Application of antibacterial medication to periapical lesions is one of the clinical, metronidazole is the first choice because it has a wide anti-bacterial spectrum against anaerobes. Moreover, some bacteria are resistant to metronidazole, and hence, ciprofloxacin and minocycline are added to the mix. The combination of drugs has been shown to penetrate efficiently through dentine from the prepared root canals especially from the ultrasonically irrigated root canals to eradicate lesion. Available drugs are powdered and mixed in a ratio of 1:3:3 (3 Mix) and mixed either with macrogol-propylene glycol (3 Mix-MP) with canal sealer, amazingly worked in the periapical lesions.

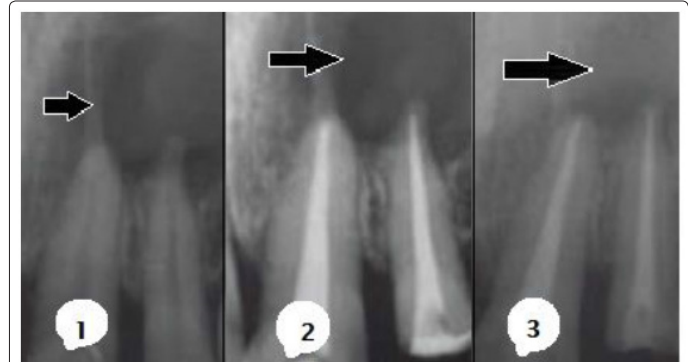


Figure 1: Showing periapical lesions

Figure 2: After using LSTR with sealer and sealants

Figure 3: Healing of periapical lesions due to LSTR containing obturation

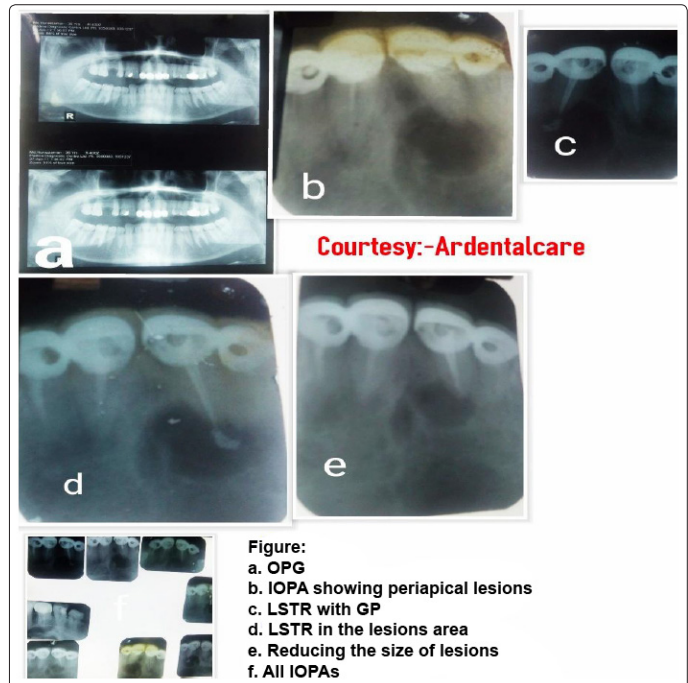
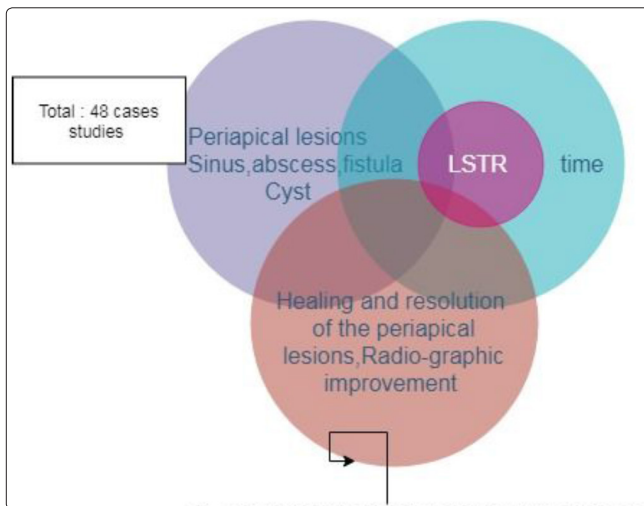


Figure:  
a. OPG  
b. IOPA showing periapical lesions  
c. LSTR with GP  
d. LSTR in the lesions area  
e. Reducing the size of lesions  
f. All IOPAs



**Cases Studies**

Among 50 patients few studies are showing here;

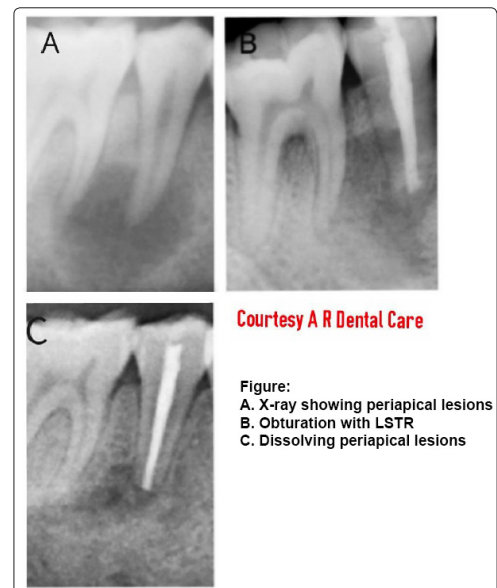


Figure:  
A. X-ray showing periapical lesions  
B. Obturation with LSTR  
C. Dissolving periapical lesions

## Conclusion

In a nut shell, LSTR has changed the treatment protocol in the field of endodontics, amazing improvement, painless easy to manipulation. In comparative other medicaments LSTR has great potency against anti-bacterial, anti-inflammatory conditions. All of my cases showing great changes of periapical lesions, clinical complaint of pain, swelling. LSTR will bring a radical change in the dentistry where minimum invasive maximum outcome [1-15].

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