

# Infectious Smiles

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Focus on Anti-infectives



## Influence of Qualification and Practice Settings of Dental Practitioners on Antimicrobial Prescribing in Delhi and National Capital Region, India

### Introduction

In dentistry, antimicrobials should be prescribed for the control of existing local or systemic infections and not for merely relieving pain due to inflammation. Prophylactic antimicrobials are required in only few associated systemic conditions.

Dental practitioners account for nearly 7% of prescribed antimicrobials. Culture sensitivity is seldom carried out in dentistry, and the antimicrobial prescriptions are mostly empirical and at times excessive. Examples of dental conditions where antimicrobials are not required yet commonly prescribed are acute periapical infections, acute pulpitis, dry socket, chronic inflammatory periodontal conditions, periodontal abscess, dentinal hypersensitivity, and cracked tooth.

As the essential therapeutic and prophylactic role of antimicrobials is linked with current threat of antimicrobial resistance, it is important to emphasize on appropriate antimicrobial prescription.

### Discussion

This study investigated the prescription pattern of antimicrobials among dental practitioners in India. The results show that prescribing did not differ significantly between academic and private practice settings. Postgraduate dental practitioners prescribed antimicrobials more rationally. The trend of higher antimicrobial prescribing by graduates was also reported in a previous Indian study; however, an Iranian study did not show any difference in prescribing behavior with qualification.

A wide range of antimicrobials were prescribed. More than two-third practitioners prescribe by brand name. Although when asked to mention three preferred antimicrobials, 15% practitioners listed same antimicrobials under different brand names which indicate lack of awareness regarding brand and generic names as well as higher possibility of medication errors.

Majority of the participants prescribed FDCs (Fixed Dose Combinations). Amoxicillin + clavulanic acid was most frequently prescribed which is rational. The second most commonly prescribed FDC was ofloxacin + ornidazole which is not considered rational due to the difference in antimicrobial spectrum, pharmacokinetic and pharmacodynamic profile, and increased risk of ADR (Adverse Drug Reaction) with the combination. Few practitioners also prescribed cloxacillin and dicloxacillin with amoxicillin and cefixime. These combinations have no established synergistic effect.

Dental conditions that require antimicrobials are few. These include space infections, acute necrotizing ulcerative gingivitis, aggressive periodontitis, and periodontal abscess which are often associated with signs of systemic involvement such as elevated body temperature and lymphadenopathy.

“ The present study reveals that although dental practitioners come across ADRs, they do not report them and do not actively seek ADRs. ”

The Indian Council of Medical Research has initiated antimicrobial stewardship program which aims to restrict inappropriate use of antimicrobials, optimize selection, dose, route and duration of the treatment for best outcomes, minimizing detrimental adverse events, excessive costs, and emergence of resistance. The team involved in this program mainly consists of infectious disease physician, clinical pharmacologist/ pharmacist, clinical microbiologist, infection control nurse, and the hospital administrator.

### Reference

1. Wasan et. al., Influence of Qualification and Practice Settings of Dental Practitioners on Antimicrobial Prescribing in Delhi and National Capital Region, India. Journal of Natural Science, Biology and Medicine; 2017 Jul-Dec; 8(2): 229–234.

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