

UNIVERSITI TEKNOLOGI MARA

**ANALYSIS OF PRESCRIBING ANTIBIOTICS
KNOWLEDGE AMONG DENTAL
PRACTITIONERS IN KLANG VALLEY REGION**

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ABSTRACT

There is a major concern with ongoing exaggerated use of antibiotics in dental practice and the emergence of resistant bacterial strains. In recent years, dentists have reported a shift from narrow-spectrum to broad-spectrum antibiotic prescriptions due to increasing antibiotic resistance. In addition, the empiric use of antibiotic prophylaxis for dental procedures, especially those that cause bleeding in the mouth has become a reasonably well established practice among dental professionals. This misuse of antibiotics is no longer acceptable and the dentists must prescribe antibiotics in a judicious and prudent manner to avoid the adverse effects of antibiotics.

The main aims of this study are to assess the knowledge among dental practitioners in the use of antibiotics for patients with acute dental infection and to compare their prescription with the Malaysia National Clinical Guidelines (MNCG) 2003, investigate the prescribing habits of dental practitioners for some clinical dental situations, determine their antibiotic prescribing knowledge for prophylactic purpose and compare their prescription with American Heart Association (AHA) guidelines 2008, assess their knowledge regarding the need of cardiac diseases to antibiotic cover and also to determine their knowledge regarding antibiotic cover for dental procedures in patients at risk of infective endocarditis.

This study utilized a questionnaire which was designed to investigate the antibiotic prescribing patterns by dental practitioners in the Klang valley region in Malaysia. To evaluate its validity and reliability, the questionnaire was pretested by a pilot study before the actual data collection.

The questionnaire was distributed to 706 dental practitioners who are working in the Klang valley region; this includes clinicians, academicians, researchers and others. The returned questionnaires were analysed using SPSS to determine the antibiotic prescribing, to identify compliance to antibiotic guidelines (American Heart Association (AHA) guidelines 2008 and National Clinical Guidelines 2003 guidelines) and to evaluate the statistical significance of various demographic parameters.

217 dentists responded to the questionnaire and the responses show that there is a wide variety of antibiotic prescriptions among dentists; there is also antibiotics misuse in some clinical dental conditions.

The majority of dental practitioners surveyed (25.8%, n=56) prescribed amoxicillin 500 mg 3 times daily for 5 days (7.7 DDDs for each prescription) to treat acute dentoalveolar infection for patients not allergic to Penicillin, although the National Clinical Guidelines

(2003) recommended phenoxymethyl penicillin 250-500 mg as a first choice for the treatment of acute dentoalveolar infection and only 2% (n=4) of surveyed dentists prescribed phenoxymethyl penicillin 250-500 mg 3-4 times daily for 5 days.

The majority of dental practitioners surveyed prescribed antibiotics for acute periapical infection before and after drainage, pericoronitis, dry socket and periodontal abscess in which local measure can be effective for their treatment.

The results show that there is a large variation in the antibiotic prescriptions patterns for prophylaxis against infective endocarditis. This study found about 30% of dental practitioners surveyed did not follow the AHA guidelines 2008 in their prophylaxis prescription for patients at risk of infective endocarditis and not allergic to Penicillin.

Furthermore, there is uncertainty as to which cardiac conditions require prophylaxis and for which particular dental procedures, as 12.0% (n=26) of dental practitioners surveyed prescribed antibiotics when performing invasive dental procedure for patients with old myocardial infarction in which antibiotics are not recommended and more than 50% (n=151) of dental practitioners surveyed prescribed antibiotics for bleeding from trauma to the lip or oral mucosa in patients at risk of infective endocarditis in which antibiotics are not recommended (AHA guidelines 2008).

The results also demonstrate that there is a lack of knowledge in the incidence of adverse reactions of some antibiotics and development of multi-resistant strains; more than 50% of dental practitioners surveyed did not know the meaning of MRSA. This reveals that there is lack of knowledge with regards to the development of antibiotic resistance and its risk.

There is a clear need for the development of prescribing guidelines, regular monitoring of antibiotic prescriptions by dental practitioners and educational initiatives to encourage the rational and appropriate use of the antibiotics.

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