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**Comparative Efficacies of Amoxicillin, Clindamycin, and Moxifloxacin in Prevention of Bacteremia Following Dental Extractions**

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Antimicrob Agents Chemother 2006 Sep;50:2996-3002.

**Background:** Despite lack of conclusive evidence of efficacy, use of antimicrobial prophylaxis prior to dental extractions (DE) in patients with significant risks for endocarditis has been standard practice and recommended by several international organizations. Due to frequent gastrointestinal side effects from macrolide and related antimicrobials, clindamycin is recommended in patients with history of beta-lactam hypersensitivity.

**Objective:** To compare efficacies of preventing post DE bacteremia by administration of oral amoxicillin (AMX), clindamycin (CLI), and moxifloxacin (MXF).

**Methods:** Patients with behavioral problems requiring DE under general anesthesia underwent the study. Recent use of antimicrobials or oral antiseptics and risks for endocarditis were among exclusion criteria. 221 patients were divided into 4 groups of control (53), AMX 2 g (56), CLI 600 mg (54), and MXF 400 mg (58). The antimicrobial was administered orally 2 hours prior to the procedure. Blood cultures were

performed at baseline (postnasotracheal intubation but before DE), 30 s, 15 min, and 1 h after completion of DE.

**Results:** Percentages of positive blood cultures at several time points among the 4 groups are summarized in the Table. Overall statistically significant differences were observed between the control group and the AMX and MXF groups (47.8 VS 17.5 and 25.5%, respectively;  $P < 0.001$ ) but not the CLI group (47.8 and 50%;  $P < 0.5$ ).

	Control	AMX	CLI	MXF
Baseline	9.4%	3%	12.5%	7.5%
30 s	96.2%	46.4%	85.1%	56.9%
15 min	64.2%	10.7%	70.4%	24.1%
1 h	20%	3.7%	22.2%	7.1%

Polymicrobial bacteremia was observed in 29, 0, 31.7, and 14.8% of the four groups; significant differences being present in AMX and in MXF but not in CLI groups, when comparing with controls. Most frequent blood isolates in all groups were viridans group streptococci. MIC<sub>90</sub> of CLI for the isolates from both the control and the CLI groups were  $\geq 256 \mu\text{g/ml}$ .

**Conclusion:** Oral amoxicillin is efficacious in reducing bacteremia post-DE. Moxifloxacin seems to be an acceptable option for patients with problems with a beta-lactam. Clindamycin does not seem to be a good candidate for the purpose.

**Comments:** Macrolide and related compounds, although proposed as a second choice for beta-lactam-allergic patients in some protocols, may need to be

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Received for publication: December 13, 2006.

carefully considered in view of resistance profiles of blood isolates in this study and of their GI side effects. An efficacy of clindamycin in reducing bacteremia following DE in previous studies is controversial, and is in doubt from the present study. Patients with non-IgE-mediated allergy to penicillin may receive oral

cephalexin or IM/IV cefazolin. Per the present study, moxifloxacin may seem to be an attractive candidate. Quinolone resistance in gram-negative bacteria worldwide, however, is present at alarming levels. Only judicious antimicrobial use can delay further damage to this class of an invaluable weapon.