



PIC QUESTION OF THE WEEK: 04/25/05

Q: Can Vibramycin® be substituted for Periostat® in the treatment of periodontal disease?

A: Periodontal disease is common and affects more than 80% of the worldwide population. It refers to a group of conditions caused by accumulation of dental plaque and the subsequent immune response of the host to bacteria and toxins present in plaque. The disease includes conditions such as gingivitis (inflammation of the gums) and periodontitis (inflammatory disease of bone and ligaments supporting the teeth). There are many agents approved by the American Dental Association to assist in the control or prevention of periodontal disease. Chlorhexidine, available as an oral rinse (Periodex®) and periodontal chip (Periochip®), is effective in reducing plaque and gingivitis with short-term use. Delmopinol (Decapinol®), a recently marketed surfactant rinse, may also be useful in periodontal disease. Due to the increased risk of bacterial resistance, long-term use of prescription antibiotics is seldom recommended for periodontal disease. However, Periostat® (20 mg doxycycline hyclate) has been beneficial in the treatment of this disorder. This low-dose formulation is administered twice daily for long-term (up to 9 months) management of periodontal disease. Periostat® suppresses collagenase, an enzyme that destroys connective tissue in the gums. Therefore, the drug's use in periodontal disease is not based on antimicrobial activity, but its ability to modulate the inflammatory response. Because the doxycycline dose is too low to possess antibacterial properties, resistance to this medication should not develop. Due to the sub-antimicrobial dose of Periostat® and decreased risk for bacterial resistance, it is preferred over standard-dose doxycycline for the long-term treatment of periodontal disease.

References:

- Wynn RL, Meiller TF, Crossley HL. Drug Information Handbook for Dentistry. 9th ed. Hudson: Lexi-Comp;2003.
- Jacobson JJ, Walker C. Antibiotics. In: Ciancio SG, ed. ADA Guide to Dental Therapeutics, 3rd ed. Chicago: 2003; 151-7.
- Doxycycline Hyclate 20mg Capsules (Periostat). Pharmacist's Letter/Prescriber's Letter 1998;14(11);141104.

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