



PIC QUESTION OF THE WEEK: 11/3/06

Q: Can minocycline produce purple discoloration of the tongue?

A: Minocycline is a semi-synthetic compound belonging to the tetracycline class of antimicrobials. The most common adverse effects associated with minocycline are gastrointestinal complaints including cramping, nausea, vomiting, and diarrhea. In addition, dizziness, lightheadedness, and photosensitivity are relatively frequent. More severe reactions such as drug-induced lupus, hepatitis, and pseudotumor cerebri have occasionally been reported. Hyperpigmentation is considered the most common complication of *long-term treatment* with minocycline. It is primarily observed in the skin, but has also been reported in the nails, lips, eyes, bones, and other sites. Most authors categorize *cutaneous* hyperpigmentation into three types. The first type (usually blue-black in color) affects inflamed, scarred tissue. Type 2 presents as a blue-gray pigment on normal skin, especially that of the arms and legs. Diffuse pigmentation of sun-exposed areas (described as muddy brown) characterizes type 3 disease. Biopsy in affected patients usually reveals deposition of excess melanin and or iron complexes in the dermis and/or epidermis. These complexes usually contain minocycline and/or its metabolites. Rarely, minocycline has produced hyperpigmentation of the tongue either as a single finding or in combination with discoloration of the nails, skin, etc. This reaction occurs predominantly in women and appears independent of race, age and duration of therapy. Its onset has been reported as early as a few weeks up to three years after initiation of treatment. The highly lipophilic nature of minocycline and its large volume of distribution may contribute to its frequent association with hyperpigmentation. The drug has the highest lipophilicity of all tetracyclines and is the only member of the class associated with pigmentation of the oral mucosa. Levels of minocycline in the saliva can reach concentrations of up to 65% those of the serum. Once oxidized, minocycline crystals in the saliva turn black and the tongue becomes stained. The color is usually described as purple-black or slate-gray. Predisposing factors for lingual hyperpigmentation include a collective dose of 100 grams, concomitant use of corticosteroids, and age greater than 35 years. The duration of lingual discoloration has ranged from six weeks to greater than one year after discontinuing therapy. Laser therapy can be considered if hyperpigmentation does not remit. Although rare, discoloration solely of the tongue may result from treatment with minocycline. Other causes of hyperpigmentation must always be ruled out.

References:

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