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BACTERIAL RESISTANCE IN THE CONTEXT OF ORAL HEALTH

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The introduction of antibiotics revolutionized health care in the twentieth century, however, their intensive use promoted the selection of resistant phenotypes that have translated into a current public health problem worldwide. The fact that, between 7–11 %, of the total antibiotic prescription is done by dentists, some of most problematic resistant microorganisms are members of the oral microbiome and the oral enviroment is ideal for genetic exchange makes dentists an essential target in rational antibiotic prescription.

Although the existing studies present great geographical and methodological diversity it's a fact that there is a cause–effect relationship between the consumption of antibiotics and the development of bacterial resistance and it is estimated that in the last two decades the level of oral bacterial strains resistant to antibiotics has doubled. The aim of this work is to describe what is known about antimicrobial resistance in oral bacteria and to discuss some measures as to how dentists´s rational antibiotic prescription can be stimulated.

Resistance to major antibiotics used in the treatment of oral/dental infections are presented by some of the main ethiological species. Among the species resistant to amoxicillin *Strepcoccus viridans*, *Peptostreptococcus spp*, *Prevotella spp* (*intermedia*), *Prevotella denticola, Porphyromonas spp (gingivalis), Fusobacterium spp (nucleatum)* and *Veillonnella spp* are included. *Streptococcus viridans , Strepcoccus oralis, Strepcoccus mitis (salivarius), Strepcoccus spp, Peptostreptococcus spp, Prevotella spp (intermediate), Porphyromonas spp (gingivalis) , Fusobacterium spp (nucleatum*) have been described as resistant to penicillins. A significant portion of these species is also described as being resistant to clindamycin and macrolides, including erythromycin or azithromycin, frequentaly used by dentists. As for Metronidazole, often used in combination with other(s) antibiotic(s), the emergence of bacterial resistance has been slow, however it is described for various species, and it is particulary worrying when *Actinobacillus actinomycetemcomitans* is considered due to its role in periodontal disease. Tetracyclines, although increasingly less prescribed in the treatment of these infections, are broad spectrum antibiotics and widely used in other areas, requiring attention and surveilance of the specific resistances. Additionally, the tetracyclines may be used in association with penicillins or macrolides and may contribute to spreading of resistance determinants.

In this context, it is urgent improve dentists´ awareness on rational antibiotic prescription.