

**Embargo: Thursday 21 June 2018, 12:30 CEST****EuroPerio9 press release****Antibiotic resistance among patients with severe gum disease is increasing****Trend raises concern over the indiscriminative use of antibiotics in periodontal treatment**

*Amsterdam, the NETHERLANDS. 21 June 2018* – Results of a study presented today at EuroPerio9, the world's leading congress in periodontology and implant dentistry, found that antimicrobial resistance is on the rise among German patients with severe periodontitis (1).

Antibiotic resistance is rising to dangerously high levels in all parts of the world. Health authorities are warning about the global crisis of antimicrobial resistance (2) that is threatening the benefits achieved with antibiotics that have allowed millions of lives to be saved since the early 20th century.

“Antibiotic resistance is of enormous importance to dentistry, since the proportion of medically prescribed antibiotics attributable to dentistry is between 8-11.3% of the total (Norway, Canada, USA). In Germany, the percentage is about 8.8% (3,4,5),” explained lead author Dr Karin Jepsen, Associate Professor, Centre for Dental and Oral Medicine, Department of Periodontology, Bonn, Germany.

“At present, most systemic periodontal antibiotic treatment is prescribed without guidance from a prior microbiologic analysis. One of the risks of this approach is that the targeted periodontal pathogens are resistant or poorly susceptible to the antibiotic drug selected, affecting the efficacy of the antimicrobial therapy, and increasing the risk of treatment failure,” explained Dr Jepsen.

A large number of clinical trials has shown that adjunctive systemic antibiotics combined with mechanical subgingival cleaning of the teeth offer additional clinical improvements compared to cleaning alone, especially in severe disease (6,7). Unfortunately, results from clinical studies employing antibiotics for the treatment of periodontitis are difficult to translate to everyday practice because not all patients show the same magnitude of long-term clinical benefit (8).

Patients with gum disease frequently yield multiple species of periodontal pathogens that may vary in their degree of resistance to antibiotics (9). The oral microbiota also seems to be an important reservoir for transferable antimicrobial resistance (10,11,12,13,14).

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“Our aim in undertaking this study was to determine the occurrence of in vitro antibiotic resistance among samples of bacteria taken from the gums of periodontitis patients,” said Dr Jepsen.

“Bacterial samples taken from the inflamed periodontal pockets of 7804 German periodontitis patients were analysed by a laboratory specialised in oro-dental microbiology over a time period lasting from 2008 to 2015. Selected pathogens (germs) were tested for susceptibility to different types of antibiotics and analysed for drug resistance over time,” explained Dr Jepsen.

“Overall, we found that the four key-bacteria selected for our study were resistant to at least one of the antibiotics tested. In the data we collected we also found increasing resistance trends for three of the bacterial species, raising concerns over the indiscriminate use of antibiotics in the treatment of periodontal disease,” declared Dr Jepsen.

When asked about the implications of these results for clinical practice, Dr Jepsen answered: “In most cases, periodontitis can be managed by conventional scaling and root planing therapy, as well as improved oral hygiene measures (intra-oral infection control). Antibiotics should be restricted and used only in cases of severe periodontitis. If antibiotics are to be prescribed for patients with periodontitis, testing of antimicrobial susceptibility patterns is encouraged for a more targeted approach.”

“In general, antibiotics should not be recommended for the treatment of most cases of periodontitis (mild to moderate disease). Exceptions may include cases of early onset disease, if the periodontal infection needs to be rapidly suppressed. However, these patients should ideally be treated in the practice setting of a specialist,” added Dr Jepsen.

Concerning potential limitations to the study, Dr Jepsen explained: “Our study is a regional (German) surveillance of resistant periodontal bacteria and globally we might see a slightly different picture. It may vary from northern European countries where antibiotic usage is generally more restricted compared to southern Europe, South America and India, where access to antibiotics is less controlled and there is more unsupervised consumption. Also, compared to the situation in the laboratory, subgingival bacterial populations are organised in complex communities (biofilms) that may have an impact on their resistance performance in the in vivo situation.”

In the future, key genetic determinants of resistance must be identified through genome sequences. Next-generation sequencing methods to define relevant resistomes within the microbes are needed in order to further the design of diagnostics and therapeutics for the treatment of infections with resistant bacteria.

Dr Jepsen announced that the European Workshop in Periodontology, run by the EFP, is planning to develop guidelines about this crucial topic in 2019.

“Indiscriminate use of antibiotics in the treatment of periodontitis is leading to increased resistance to these potent drugs. This is a vital issue. Resistance to antibiotics compromises our ability to treat infections and heal patients. All health professionals have a responsibility to prescribe antibiotics

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only when they are truly needed in order to limit unwanted collateral damage and side effects like the development of antibiotic resistance. Together with strategies for the rational use of antibiotics, health authorities need to improve local and global surveillance of resistant bacteria," concluded Dr Jepsen.

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### Notes to Editors

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**EFP Press Office Contact:** [press@efp.org](mailto:press@efp.org)

### [About the EFP](#)

The European Federation of Periodontology (EFP) is an umbrella organisation of 30 national scientific societies devoted to promoting research, education and awareness of periodontal science and practice. It represents more than 14,000 periodontists and gum-health professionals from Europe, northern Africa, and the Middle East.

### [About EuroPerio9](#)

EuroPerio is the world's biggest scientific meeting devoted to periodontology. The most recent of these triennial meetings, EuroPerio8, took place in London in June 2015 and brought together almost 10,000 people. EuroPerio9 will take place from 20 to 23 June 2018 at the [RAI](#), Amsterdam, The Netherlands.