How chairside molecular saliva diagnostics boosts oral and systemic health

BY DIRK-ROLF GIESELMANN, INSTITUTE FOR MOLECULAR DIAGNOSTICS (IMOD)

The enzyme can be found everywhere in the body and is easily detectable in the crevicular fluid. An international research team has demonstrated the effectiveness and accuracy of oral saliva analysis with more than 200 studies using aMMP-8 as the gold standard for oral prevention analysis. These studies have confirmed that the level of the acute collagenolytic destruction process can indicate the level of gingival, periodontal or peri-implant soft and hard tissue destruction.

Thanks to the ORALyzer, aMMP-8 can be directly quantified chairside in ng/ml—a revolution for chairside diagnostics. In addition, the oral microbiome can be professionally analysed in seconds. “This development is a huge step forward for in-office diagnostics. The aMMP-8 ORALyzer increases diagnostic competence significantly. For dental hygiene, it is as important as an x-ray is for surgery,” stated Prof. Timo Sorsa, one of the leading European oral microbiology experts at the Karolinska Institute in Stockholm.

Studies show that an increasing number of patients are actually in a state of “pre-perio” or active periodontal degeneration. In fact, more than 40 per cent of all German patients already suffer from so-called “active periodontal degenerative processes”—one of the early stages of periodontal disease. As a rule, the initial destruction of the periodontium is overlooked, as this is not yet measurable. The average dental practice therefore loses more than a quarter of a million euros per year by not supplying the necessary preventive measures.

A step forward for digital prophylaxis

With the ORALyzer, the dental team can now identify this group of patients, who are in the early stages of periodontal disease, and treat them more effectively. The ORALyzer analyses, within minutes, the invisible collagen destruction process that is taking place in the patient’s mouth. One of the key features of the ORALyzer is its ability to take quantitative measurement of the concentration of aMMP-8 (ng/ml). The ORALyzer is easy to use and is delegable to the hygienist or dental assistant, while it allows for a non-invasive and pain-free experience for the patients. Furthermore, the time required for administering the test is even less than three minutes. Afterwards, dental professionals can then print out the results chairside, allowing the patient to immediately observe their personalised oral health report.

80 per cent of patients invest in additional prevention treatment

The prophylaxis team can now predict the subclinical tissue destruction of periodontal or peri-implant collagen and stop it by means of targeted, individual preventive measures. The result? Increased patient awareness and motivation for prevention, in-
creased patient compliance and increased dental hygiene revenue. The ORALyzer allows the dentist to halt the tissue destruction process with secondary prevention through advanced prophylaxis. Dentists confirm that 80 per cent of the patients who are tested positively, actively request more dental hygiene services and agree to two to six professional teeth cleanings per year. Dentists will not only gain more revenue with periodontally-healthy patients, but more time can be devoted to those patients who are in need of further treatment, restorative work and other elective aesthetic procedures.

**Peri-implantitis protection**

Peri-implantitis continues to pose a risk for implant failure. Since approximately 50 per cent of all dental implants placed worldwide are threatened with peri-implant inflammation and about one third of patients develop peri-implantitis within ten years, the solution to the greatest challenge in implantology can only lie in prevention and early detection. With the ORALyzer, a clinician now has the ability to assess the subgingival inflammation status around any individual implant. This knowledge is the key to preventing the tissue around the implant from developing peri-implant mucositis and, ultimately, peri-implantitis. Every patient with implants needs to come in at least once every six months, especially if they show early signs of inflammatory tissue destruction. If elevated levels of aMMP-8 are detected in the peri-implant sulcus fluid, oral hygiene treatment can be started at the pivot point of destruction—right in time to prevent the progress and the manifestation of the disease. For an implant clinic, the ORALyzer opens the door to a significant increase in post-implant services.

**The radar system for professional perio monitoring**

More importantly, 10–20 per cent of successfully treated patients return with even more advanced periodontitis than what was observed before the initial treatment. With the ORALyzer, clinicians can test patients six to eight weeks after their perio treatment to find out if the patient is suffering from periodontal deterioration. Using the ORALyzer aMMP-8 testing system for perio treatment monitoring, a clinician can identify patients who need further treatment and can therefore effectively treat their patients and increase their profits at the same time.

**aMMP-8: The connection between oral and systemic health**

Interdisciplinary cooperation is a “high class of dentistry.” Every day, more and more research is published on the bi-directional relationship between periodontal disease and systemic health issues. Due to the high sensitivity of oral salivary diagnostics with aMMP-8, an increasing number of medical professionals are using the procedure for the detection of health risks in patients. Periodontitis, which is by far the largest of all the known silent inflammation processes, can only be addressed through an interdisciplinary approach. By identifying elevated levels of aMMP-8 in their patients with the ORALyzer, medical specialists can refer their patients to a PerioPrevention Center®, where they can receive hygiene care. PerioPrevention Centers® welcome new patients and get to do what they do best, while the patients receive the most comprehensive care possible for both their oral and overall health.

**Become a Perio Prevention Center®**

500 specialised dental practices throughout Europe will get access to the new ORALYZer digital diagnostics technology in 2017/18 and will be able to associate themselves with the growing network of physicians and dentists who use the technology.

Please register at: www.perioprevention.de for more information or to apply for access to the technology.