Asia News

“The value of salivary biomarkers for systemic disease is one of the final frontiers”

Interview with Dr David Wong, USA

In the past six years, saliva has risen to centre stage for disease detection, monitoring and even health surveillance. Dental Tribune Asia Pacific in cooperation with FDI World Dental Daily spoke with UCLA Dr David Wong at this year’s World Dental Congress in Singapore about salivary diagnostic toolboxes and how they could be utilised for detecting systemic diseases.

WDD: In recent years, the role of saliva for the detection and monitoring of diseases has risen to centre stage. Can you summarise the latest findings for us?

Dr David Wong: Seven years ago, the National Institute of Dental and Craniofacial Research (NIDCR), one of the 27 institutes at the US National Institute of Health (NIH), made a visionary investment to turn salivary diagnostics into a clinical reality. The outcomes of this scientific investment are what constitute the recent excitement and clinical potential for salivary diagnostics. We now know there are multiple diagnostic alphabets in saliva to define the diagnostic coordinates of oral and systemic diseases. Point-of-care diagnostic technologies are soon to be in place to permit a drop of saliva to detect and monitor diseases at the dental practice.

How exactly does saliva work as a biomarker?

Biomarkers are defined as cellular, biochemical, and molecular characteristics by which normal and/or abnormal processes can be recognised and/or monitored. The salivary glands (major and minor) secrete approximately 1.5 litres of saliva into the oral cavity daily, carrying with it health/disease information (biomarker information). The sources of these biomarkers can be disease sites or the salivary glands themselves can produce disease informative surrogate biomarkers. The salivary gland system can be viewed as a local anatomical organ that is poised to monitor local and systemic diseases. The good news is that the biofluid secreted (saliva) can be obtained non-invasively, painlessly and without embarrassment to the patient—no needles and no needling.

Which salivary diagnostic toolboxes are at hand or currently in development and how could these be incorporated into the clinical practice?

Current salivary diagnostic toolboxes include the diagnostic alphabets (proteome, transcriptome, micro-RNA and microbial) and point-of-care diagnostic technologies. Integration into clinical practice requires identification of effective clinical application and approval by the Federal Drug Administration in the US.

With the exception of the salivary HIV antibody test, no other salivary biomarker test has reached the FDA-level evaluation. We anticipate that our point-of-care device and biomarkers for oral cancer detection will be evaluated by the FDA in the next two years.

Do oral diseases have any impact on the diagnostic value of saliva?

A number of oral diseases have been evaluated for salivary diagnostic applications, including caries analysis, oral cancer and periodontal disease. Proper control of oral diseases in the study population to control the effect of periodontal disease and inflammation in particular is important.

Thank you very much for the interview.

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Visitors were spoilt by this year's scientific programme, which not only featured popular topics like caries, implants, aesthetics and periodontics, but also gave insight into new challenges and developments in dentistry. Among others, the prevalence of oral cancer, salivary bio-markers, and the therapeutic potential of dental stem cells and tissue engineering were discussed. Limited attendee courses were expanded to give participants the chance to learn in a more intensive and intimate environment. Auxiliaries and office personnel had the chance to get their hands on the New Patent Experience in a special full-day programme. As one participant put it: "What strikes me about this congress is how it brings together so many different specialist areas in dentistry, all under the same roof."

Although official numbers have not yet been released, exhibitors speaking to Dental Tribune Asia Pacific said that visitors' numbers did not meet their expectations. In spite of this, most exhibitors reported increased numbers in sales and business deals. Plenty of new products and processes were introduced, for example surgical instruments and handpieces that now come with built-in and long-lasting LED lights. Nobel Biocare introduced their newest long-lasting LED lights. Nobel Procera to Singaporean dentists at an official launch dinner held at the Charlton Hotel. The system aims to combine industrialised production processes with versatile and individualised esthetics for dental restorations.

In addition, continuing education was offered to trade-show visitors through Dental Tribune in collaboration with the DT Study Club, who held their first online symposium outside the US.

Members of the 2010 Local Organising Committee invited participants to next year's congress in Salvador da Bahia in Brazil, home country of the newly appointed FDI President Dr Roberto Vianna. Dr Vianna, who took over the presidency from Dr Burton Conrad from Canada, received his DDS from the Federal University of Rio de Janeiro in 1985. Since then, he has served in many national and international health organisations, including the World Health Organization and the Latin America Association of Dental Schools.

"I am very happy to lead the FDI as president over the next two years. The organisation is, of course, the voice of dentistry, but more so, it is a means of empowering dentists to think about oral health on another level, for the benefit of the greater population," Dr Vianna said. "I would like to contribute and help spread the FDI message; to accomplish the objectives expressed in our mission. The FDI is a strong organisation that continues to improve.

"I'd like to see us focus on developing our relationships and networks, both across the organisation and outside. I am very happy with the direction we are moving in. Since I became part of the Executive Committee there have been a lot of positive changes—new staff members, the relocation of head office, our Executive Director—and important projects, like the Global Caries Initiative (GCI)," he added.

The GCI is a collaborative project led by the FDI with the long-term goal of eradicating dental caries. In July 2009, the Bio Caries Conference was held in Brazil to launch the initiative, and a series of follow-up events are expected over the next ten years. Dr Vianna announced that he would support the GCI throughout his term as president.

Another important advocacy tool during his term will be the new Oral Health Atlas, which was launched at the FDI Pavilion in Singapore and will be available on Amazon UK after the FDI congress. According to Dr Vianna, this will be a landmark publication that will strengthen the FDI's position as a world leader for the promotion of oral-health information by demonstrating the state of world oral health in straightforward language for everybody—from dentists to government delegates to the general public.

Speaking about the 2010 FDI Annual World Dental Congress in his home country Brazil, Dr Vianna borrowed a phrase from France's national anthem: "Le jour de gloire est arrivé" (The day of glory has arrived): "I am very excited to see the AWDC come back to South America, for only the third time in the FDI's history. There has been a lot of breakthrough research and development in Brazil in recent years. Hosting the annual congress will further strengthen oral health promotion across the region."