Columbia University announces breakthrough in tooth regeneration

Stem-cell-infused scaffold holds potential for replacing dental implants

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NEW YORK, USA/LEIPZIG, Germany: Dental implants could soon become a secondary choice for replacing natural teeth. According to new research from the College of Dental Medicine at Columbia University in New York, three-dimensional scaffolds infused with stem cells yield an anatomically correct tooth in as soon as nine weeks once implanted. The new technique, developed by Columbia University Prof. Jeremy Mao, has also demonstrated the potential to regenerate periodontal ligaments and alveolar bone, which could pave the way for re-growing natural teeth that are able to integrate into the surrounding tissue.

Previous research on tooth regeneration has focused on culturing stem-cells directly on dental implants to improve osseointegration or outside the body, in which case the tooth is grown orthotopically.

“A key consideration in tooth regeneration is finding a cost-effective approach that can translate into therapies for patients who cannot afford or who aren’t motivated enough to undergo dental implants,” Dr Mao told Dental Tribune Asia Pacific. “Our findings represent the first report of regeneration of anatomically shaped tooth-like structures in vivo.”

Latest studies from Sweden have demonstrated that bone loss, one of the main reasons for dental implant failure, remains a challenge for dental clinicians.

Dr Mao’s study was published in the recent edition of the Journal of Dental Research and will be presented at this year’s International Association of Dental Research congress in Barcelona.

Columbia has announced that it has patient applications on file regarding the engineered tooth-like structures in vivo.

The Minister for Health and Family Welfare in India, Ghulam Nabi Azad, has announced legislation seeking to establish a new government-run agency to replace all existing regulatory medical bodies in the country.

The National Council for Human Resources in Health bill, which follows a similar but unsuccessful 2005 political campaign by former Health minister Ahamdnamum Ramadoss, is also intended to limit tenures of appointed executive officials.

Currently, health-related professions in India are represented by a number of regulatory bodies, such as the Medical Council of India (MCI) and the Dental Council of India (DCI). Their main tasks are to observe and maintain educational standards in India and abroad. Corruption charges against the incumbent heads of the DCI and the MCI have recently placed pressure on the government to institute reform of the country’s existing regulatory system.

Filipinos claim salary upgrade

The Filipino government has been called on to include public school dentists and assistants in the next update of the Salary Standardization Law III in July. The legislation, signed by President Gloria Macapagal-Arroyo last year, aims to standardise basic salaries, allowances, benefits and incentives for 1.5 million government employees. It also ensures the annual increase of public salaries until 2015.

Currently, more than 700 public school dentists and assistants work in the Philippines, treating a population of 21 million, according to the Department of Education Dentists’ Association. The Association says that because dental workers have to undergo regular continuing education programmes and purchase necessary dental equipment such a demand can be justified.

Europe defies economic gloom

Most major dental markets in Europe achieved growth rates above 5 per cent last year, a new report by the Association of Dental Dealers in Europe in Switzerland has revealed. France had the highest growth rates in 2009 with 20 per cent, followed by the United Kingdom (17.4 per cent) and Germany (5.2 per cent).

Sniff your dental pain away

US clinicians have found that intranasal drugs travel through the main nerve in the face and collect in high concentrations in the teeth, jaw, and structures of the mouth. The discovery could lead to a more effective and targeted method for treating dental pain, trigeminal neuralgia and other conditions.

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