Dental tissue engineering products in the U.S. market to double by 2015

By Heather Paterson, BSc & Kamran Zamanian, PhD

Use of tissue engineering is a rapidly growing trend in dental offices across the United States. Used in dental bone graft procedures, tissue-engineering products initiate osteogenesis and the selective regrowth of supporting tissues.

Tissue engineering enhances osteoinductivity to increase the rate and volume of bone regeneration, leading to increased success in dental bone grafting.

The U.S. market for tissue engineering is expected to reach nearly $50 million by 2015.

New products drive adoption

In 2009, the market for dental tissue engineering was composed of only three products: GEM-21S, distributed by OsteoHealth; INFUSE, distributed by Medtronic; and Emdogain, distributed by Straumann.

Emdogain was approved by the FDA in 1999, while both GEM-21S and INFUSE did not enter the market until after 2005. Tissue-engineering products are gaining more acceptance from dentists and oral surgeons, allowing them to be used in a wider range of dental procedures.

The continued introduction of new, competitive products will drive the adoption of tissue engineering to improve the effectiveness of bone grafting, especially in elderly patients.

Expands patient base for dental bone grafting

Bone regeneration is enhanced with tissue-engineering products, allowing dental bone grafting procedures to be performed on patients who would otherwise not be able to receive such treatment.

Tissue-engineering products encourage native bone cells, or osteoclasts, to grow into grafted bone material, compensating for the very low endogenous or natural level of growth factors in older patients.

A lucrative market opportunity

Tissue engineering products for dental applications are expected to remain a niche market, but their high price and associated procedure fees represent a lucrative opportunity for dentists.

Procedures using tissue-engineering products do not require much more time than conventional bone grafting procedures while generating substantially larger billing revenues.

Autografts account for large proportion of dental bone grafts

In 2009, over one fifth of dental bone graft materials used were autografts, material taken from the patient's own body, as shown in Chart 1. Other types of bone graft substitutes include allografts, demineralized bone matrix (DBM), xenografts and synthetics.

Autografts are widely considered as an optimal material for bone grafting due to their inherent growth factors and natural scaffolding. While autografts have no commercial price, the time required to harvest them is an opportunity cost for dental professionals.

Autograft materials are generally used immediately after the extraction of the problematic tooth and often combined with another type of bone graft substitute.

The volume of autografts used is expected to grow at a compound annual growth rate (CAGR) of 8.3 percent by 2015.

Strong recovery expected in dental bone graft substitutes market

The U.S. market for dental bone graft substitutes (BGS) experienced a large decline in late 2008 through 2009 due to the economic recession, which resulted in a decreased demand for dental implants and the associated bone grafting procedures.

Many consumers lost financial confidence and limited their spending for dental implant procedures and bone grafts.

With fewer patients, practitioners were reluctant to purchase as many implants and bone graft substitutes.

However, the dental bone graft substitutes market closely follows that of dental implants and is expected to show a strong recovery in 2010, returning to double-digit growth rates.

The bone graft substitute market is expected to grow faster than the dental implant market as long as prices for BGS materials increase faster than those for implants. DT

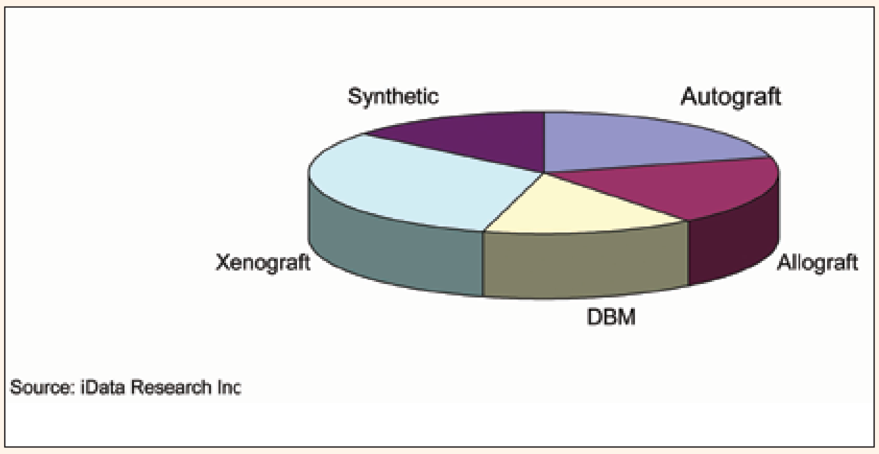

Chart 1: Dental bone graft substitutes by material type, U.S., 2009.

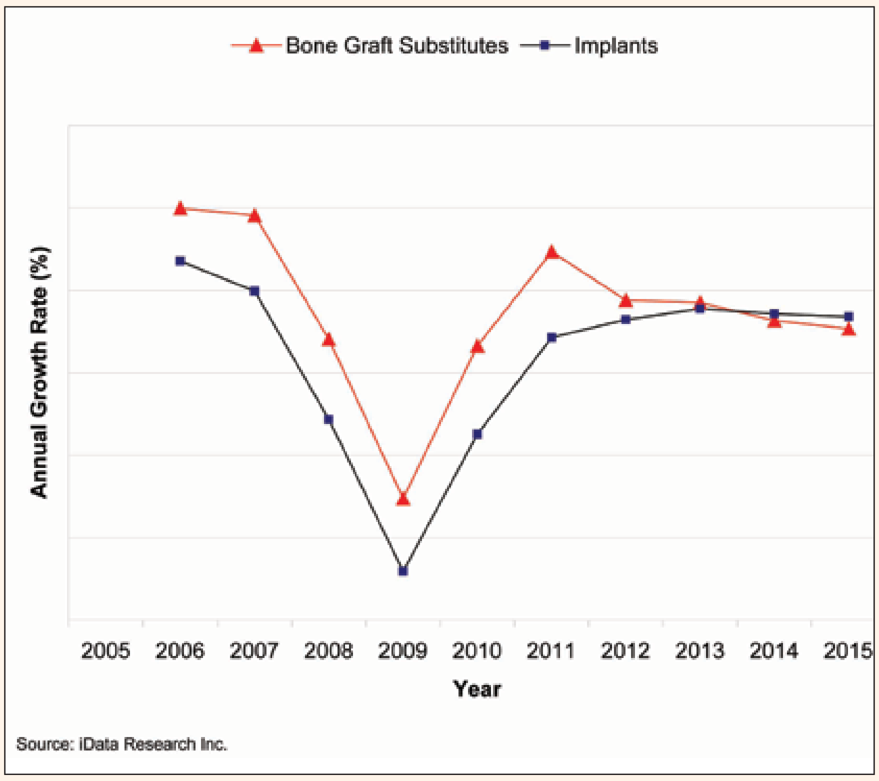

Chart 2: Markets for dental implants and bone graft substitutes, annual growth rate, U.S., 2005–2015.

About the authors

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The information contained in this article is taken from a detailed and comprehensive global series on the "Markets for Bone Graft Substitutes and Other Biomaterials 2009," which is available for purchase from iData Research and includes coverage on the United States, 17 countries in Europe and three countries in Asia Pacific.

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