OTHER JOURNALS IN BRIEF

A selection of abstracts of clinically relevant papers from other journals.
The abstracts on this page have been chosen and edited by John R. Radford.

DENOSUMAB – DENTAL HEALTH

Denosumab, an alternative to bisphosphonates but also associated with osteonecrosis of the jaw – what is the risk?

Sidhu HK. *Dent Update* 2015; **42:** 436–440

Dental health to be secured before and during denosumab therapy.

Correspondence in the Letters section of this Journal (eg Br *Dent J* 2014; **217:** 258–259) have reported that new drugs, such as denosumab (Prolia®, XGEVA®), and the antiangiogenic agents bevacizumab (Avastin®) and sunitinib (Sutent®), of course in addition to bisphosphonates, are associated with osteonecrosis of the jaw (ONJ). This review describes the mechanisms of action and therapeutics of denosumab and bisphosphonates. Denosumab is a monoclonal human antibody that has bone antiresorptive properties. It is used to prevent osteoporotic fractures in postmenopausal women who cannot take bisphosphonates, and prevention of skeletal-related events in adults with bone metastases. In the above cited correspondence, it was stated the 'risk of ONJ is about 1% for cancer patients receiving intravenous BPs (zole(n)dronate), and there is a comparable figure for cancer patients exposed to denosumab'. A key difference between denosumab and zoledronic acid, is that the effects of denosumab are reversed after six months. Although controversial, drug-holidays for those on denosumab (and sunitinib) for whom dental surgery is indicated are not discussed.

DOI: 10.1038/sj.bdj.2015.614

OSTEONECROSIS OF THE JAW

Is periodontal disease a risk factor for the development of MRONJ?

Watts D. *Fac Dent J* 2015; **6:** 126–129

'...there is strong correlational evidence to support an association between periodontal disease and MRONJ in patients taking high-dose intravenous bisphosphonates.'

Medication-related osteonecrosis of the jaw (MRONJ) refers to a condition 1) that comprises exposed necrotic bone, 2) has been present for more than eight weeks, and 3) is not associated with radiotherapy or metastatic disease. This literature review describes the link between periodontal disease and MRONJ. The introduction of putative periodontal pathogens and their endotoxins in both mice and rat models have been shown to cause MRONJ-type lesions. Nevertheless, it is difficult to draw firm conclusions because 'high dose of zoledronic acid (*per se*) may have resulted in MRONJ-like lesions irrespective of the presence of the periodontal disease.' Several human studies have shown that those patients who have MRONJ have more severe periodontal disease. The author cites a paper that suggests the following mechanism for this association; nitrogen-containing bisphosphonates could enhance the release of interleukins from macrophages infected with the periodontal pathogens *Porphyromonas gingivalis* and *Tannerella forsythia*.

DOI: 10.1038/sj.bdj.2015.615

REPAIRING FRACTURED CERAMIC

Surface treatments for repair of feldspathic, leucite- and lithium disilicate-reinforced glass ceramics using composite resin

Neis CA, Albuquerque NL *et al. Braz Dent J* 2015; **26:** 152–155

No single method for treating the surface of fractured different types of ceramic before placement of resin composite.

The investigators found that 1) hydrofluoric acid (10%) should be used to surface condition damaged lithium disilicate ceramic (IPS e.max Press, Ivoclar Vivadent), whereas 2) use of a diamond bur (30 µm grit) is sufficient for leucite-reinforced glass ceramic (IPS Empress, Ivoclar Vivadent). An alternative method for treating leucite-reinforced ceramic would be the use of tribochemical process. The use of hydrofluoric acid lowered the bond strength between resin composite and leucite-reinforced glass ceramic. And, for feldspathic porcelain (VITA VM 7, VITA Zahnfabrik), none of the treatments increased the microtensile bond strengths compared with the control (no surface treatment). These investigators used 12 blocks of each type of ceramic, which were abraded and treated using the different surface conditioning regimens. A silane coupling agent was used before the placement of the resin composite. Each sample was thermocycled. Microtensile bond strength were measured and the failure pattern assessed using a stereomicroscope. Adhesive failure was the predominant pattern of failure.

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ORTHODONTICS – WHITE SPOT LESIONS

White spot lesions after orthodontic treatment assessed by clinical photographs and by quantitative light-induced fluorescence imaging; a retrospective study

Beerens MW, Boekitwetan F *et al. Acta Odontol Scand* 2015; **73:** 441–446

Following debonding, white spot lesions associated with fixed orthodontic treatment can regress although some become worse.

Orthodontic treatment can be associated with white spot lesions that can remain as 'scars'. In this study, photographs were taken of 51 subjects immediately after debonding, and one year later. From a possible 918 buccal surfaces, over one third demonstrated white spot lesions immediately following debonding. A substantial proportion of these white-spot lesions had regressed when the subjects were examined again after one year. These investigators took both conventional intra-oral photographs and quantitative light-induced fluorescence images. Those white spot lesions captured on the intra-oral photographs were quantified using the ICDAS and also visual transition. Of note, the investigators elected not to dry the teeth before taking the photograph. ICDAS score 1 was therefore excluded. Their assertion that visual transition was superior to ICDAS and indeed 'ICDAS scores did not have sufficient discriminatory accuracy' should be interpreted accordingly.

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