IN MEMORIAM

Walter J. Loesche
R.P. Ellen and D.E. Lopatin
The authors pay tribute to the late Walter J. Loesche, 16th President of the AADR.

PERSPECTIVE

Interpreting Pain as ‘Catastrophic’ Makes It Worse: The Neurological Basis
J.T. Newton
The author offers a perspective on the paper by Lin and colleagues that demonstrates the ability of cross-cutting, multidisciplinary research to explore psychological processes influencing biological processes.

DISCOVERY!

National Supervised Toothbrushing Program and Dental Decay in Scotland
L.M.D. Macpherson, Y. Anopa, D.I. Conway, and A.D. McMahon
This is the first study to demonstrate the association between a supervised nursery toothbrushing program and a reduction in dental caries at a community- and country-wide level.

CRITICAL REVIEWS IN ORAL BIOLOGY & MEDICINE

Biomarkers of Epithelial-Mesenchymal Transition in Squamous Cell Carcinoma
C.S. Scanlon, E.A. Van Tubergen, R.C. Inglehart, and N.J. D'Silva
This review summarizes studies of both classic and new biomarkers of epithelial-mesenchymal transition in the context of head and neck squamous cell carcinoma progression.

New Paradigms on the Transport Functions of Maturation-stage Ameloblasts
R.S. Lacruz, C.E. Smith, I. Kurtz, M.J. Hubbard, and M.L. Paine
Recent studies on amelogenesis have identified a multitude of gene products that appear to be linked to specific cellular activities, and this review describes the main cellular activities of these genes during the maturation stage of amelogenesis.

CLINICAL

Pain Catastrophizing is Associated with Dental Pain in a Stressful Context
C.-S. Lin, D.M. Niddam, M.-L. Hsu, and J.-C. Hsieh
Both the situational factor (unpredictability) and the trait factor (catastrophizing) influence dental pain, highlighting the role of cognitive-affective factors in pain control of dental patients.

Brain Activity and Human Unilateral Chewing: An fMRI Study
A. Quintero, E. Ichesco, C. Myers, R. Schutt, and G.E. Gerstner
This study provided evidence for specific brain areas associated with chewing in humans, and demonstrated that brain activation patterns may dynamically change over the course of chewing sequences.

Masseter Motor Unit Recruitment is Altered in Experimental Jaw Muscle Pain
The authors’ findings suggest the need to re-assess management strategies based on models that propose uniform effects of pain on motor activity.

Tooth Agenesis Association with Self-reported Family History of Cancer
E.C. Küchler, A. Lips, P.N. Tannure, B. Ho, M.C. Costa, J.M. Granjeiro, and A.R. Vieira
Tooth agenesis was associated with positive self-reported family history of cancer and with variants in AXIN2, FGF3, FGF10, and FGF2, and can potentially be used as a risk marker for cancer.

The Postural Autonomic Regulation of Pulpal Blood Flow
O. Ajcharanukul, E. Chunhacheevachaloke, P. Vorachart, and W. Chidchuangchai
Pulpal blood flow is affected by postural change, presumably via the autonomic nervous system.

Elevated Oral and Systemic Levels of Soluble Triggering Receptor Expressed on Myeloid Cells-1 (sTREM-1) in Periodontitis
N. Bestanci, V.O. Öztürk, G. Emingil, and G.N. Belbásakış
The increased oral and systemic levels of sTREM-1 in periodontitis show potential for this molecule as a biomarker for disease, and may also have implications in the association between periodontal infections and systemic inflammatory response.
Deficiency in Acellular Cementum and Periodontal Attachment in Bsp Null Mice


Bone sialoprotein plays a non-redundant role in acellular cementum formation, likely involved in initiating mineralization on the root surface, and is essential for periodontal function.

Dental Abnormalities in a Mouse Model for Craniometaphyseal Dysplasia

E.H. Dutra, I.-P. Chen, and E.J. Reichenberger

Increased cementum thickness may be caused by decreased extracellular PPi levels, and the incisor phenotype is likely due to hyperostosis of mandibulae, which distinguishes Ank<sup>KI/KI</sup> Ank mouse models.

Inhibiting Periapical Lesions through AAV-RNAi Silencing of Cathepsin K


This paper demonstrates that AAV-mediated RNAi knockdown gene therapy may significantly reduce the severity of endodontic disease.

Tooth Bleaching Increases Dentinal Protease Activity


Thirty-five percent hydrogen peroxide used in clinical bleaching protocols alters the structural and biochemical properties of dental hard and soft pulp tissue.

Shear Mechanics of the TMJ Disc: Relationship to Common Clinical Observations

C.M. Juran, M.F. Dolwick, and P.S. McFetridge

The regional shear mechanics of the TMJ disc suggest an observable and predictable link with the common clinical observation that the posterior region of the disc is most often the zone in which fatigue occurs, which may lead to disc damage and perforation.

Immunofluorescence image of osteoclasts transduced with adeno-associated virus encoding cathepsin K stained with acridine orange to show extracellular acidification.

For more details, see pages 180-186.