

# 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 Reena Wadia

## Effect of periodontitis on diabetes

A systematic review and meta-analysis of epidemiologic observational evidence on the effect of periodontitis on diabetes.

An update of the EFP-AAP review

Graziani F *et al.* *J Clin Periodontol* 2018; **45**: 167–187

### Periodontitis affects glycaemic control in health and diabetes.

The aim of this review was to provide an update on the available evidence on the impact of periodontitis on diabetes control, incidence and complications. Observational studies on the effect of periodontitis on diabetes, published after 2012, were identified via database searches and hand-searching journals. The key findings of the review were that healthy individuals with periodontitis exhibited a poor glycaemic control and a higher risk of developing diabetes. Individuals affected by diabetes showed a deterioration of glycaemic control if also affected by periodontitis and significantly higher prevalence of diabetes-related complications. Limited evidence was available on gestational diabetes and type 1 diabetes. The authors emphasise that due to the heterogeneity and quality of the included publications, caution should be exercised when interpreting the data and that there remains an important need for additional evidence.

DOI: 10.1038/sj.bdj.2018.246

## Periodontitis and diabetes – The biological plausibility

An update on the evidence for pathogenic mechanisms that may link periodontitis and diabetes

Polak D and Shapira L. *J Clin Periodontol*. 2018; **45**: 150–166

### Elevated pro-inflammatory factors in the gingiva of patients with poorly controlled diabetes suggests a biological pathway that may aggravate periodontitis.

The aim of this study was to provide an update on the biological plausibility of the associations between periodontitis and diabetes. A literature search was conducted of articles published between 2012 and 2016. Small-scale molecular periodontal microbiome studies indicated a possible association between altered glucose metabolism in pre-diabetes and diabetes and changes in the periodontal microbiome, with no evidence for casual relationships. Clinical and animal studies found elevated gingival levels of pro-inflammatory factors such as IL1- $\beta$ , TNF- $\alpha$ , IL-6, RANKL/OPG and oxygen metabolites in poorly controlled diabetes. Individuals with diabetes and periodontitis exhibited higher levels of systemic inflammatory factors such as circulating TNF- $\alpha$ , CRP as well as mediators of oxidative stress, and successful periodontal treatment reduced their levels.

DOI: 10.1038/sj.bdj.2018.247

## Peri-implant conditions and AGEs

Peri-implant conditions and levels of advanced glycation end products among patients with different glycaemic control

Al-Sowaygh ZH *et al.* *Clin Implant Dent Relat Res* 2018; **19**; DOI: 10.1111/cid.12584

### AGEs may be considered as potential marker of inflammation in diabetic individuals with peri-implantitis.

This study examined the clinical and radiographic peri-implant parameters and levels of advanced glycation end products (AGEs) among different glycaemic levels in diabetic patients and assessed whether the levels of AGEs correlated with clinical peri-implant parameters. Ninety-three patients were divided into four groups; Group-1: HbA1c 6.1–8%; Group-2: HbA1c 8.1–10%; Group-3: HbA1c >10%; Group-4: non-diabetic individuals with HbA1c <6%. Peri-implant plaque index, bleeding on probing, probing depth and crestal bone loss were recorded. Levels of AGEs in peri-implant sulcular fluid were quantified using enzyme-linked immunosorbent assay. Between-group comparison of means was verified with the Kruskal-Wallis test and Pearson correlation coefficient for correlations of AGE levels with peri-implant parameters. Clinical and radiographic peri-implant parameters were poor and levels of AGEs were significantly high in patients with high glycaemic levels. These findings suggest that AGEs may be considered as potential marker of inflammation in diabetic individuals with peri-implantitis.

DOI: 10.1038/sj.bdj.2018.248

## Digital technology and diabetes management

Digital health technology and diabetes management

Cahn A *et al.* *J Diabetes* 2018; **10**: 10–17

### Digital diabetes care demonstrated only modest HbA1c reduction in multiple studies and borderline cost-effectiveness, although patient satisfaction appeared to be increased.

Diabetes care is largely dependent on patient self-management and empowerment. In addition, patients and providers are generating vast amounts of data from many sources, including electronic medical records, sensors, glucometers and other wearables. This article reviewed the use of digital technology in diabetes management. Multiple digital tools have been developed to assist patients to choose wisely and to enhance their compliance by incorporating incentives from social media and gaming techniques. Healthcare teams and health administrators benefit from digital developments that sift through the enormous amounts of patient-generated data. Data are acquired, analysed, and presented in a self-explanatory manner, highlighting important trends that require attention. The use of decision support systems may offer data-driven actions that, for the most, require final approval by the patient or physician before execution and, once implemented, may improve patient outcomes. Digital diabetes care demonstrated only modest HbA1c reduction in multiple studies and borderline cost-effectiveness, although patient satisfaction appeared to be increased.

DOI: 10.1038/sj.bdj.2018.249