

Chang Gung Medical Journal

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REVIEW ARTICLES

1 **New Advances in Juvenile Idiopathic Arthritis**

Jing-Long Huang, MD

Juvenile idiopathic arthritis (JIA) is the most common pediatric rheumatic disease. Major advances in JIA research have occurred in recent years in our understanding of the the pathogenesis, definition of disease control, and treatment with biological agents. Although biologic agents may alleviate arthritic inflammation and prevent disability associated with joint destruction, continued and comprehensive observation is needed to evaluate the long-term outcomes of treatment with such biologics.

15 **Adhesion Family of G Protein-coupled Receptors and Cancer**

Hsi-Hsien Lin, PhD

The adhesion-class G protein-coupled receptors (adhesion-GPCRs) constitute the second largest GPCR sub-family, and contain an unusually large extracellular cell adhesion domain. Therefore, adhesion-GPCRs are expected to display a dual adhesion and signaling function in many biological systems. In recent years, aberrant expression of distinct adhesion-GPCR molecules has been identified in various human cancers with some receptors closely associated with cancer development. In this review article, the expressional characteristics and functional role of cancer-associated adhesion-GPCRs will be discussed.

ORIGINAL ARTICLES

28 **A Comparison between the Efficacy of Bio-Oss, Hydroxyapatite Tricalcium Phosphate and Combination of Mesenchymal Stem Cells in Inducing Bone Regeneration**

Surena Vahabi, DDS, MSc; Amirizadeh N, PhD; Shokrgozar MA, PhD; Mofeed R, DDS, MSc; Mashhadi Abbas F, DDS, MSc; Aghaloo M, DDS, MSc; Sharifi D, PhD; Jabbareh L, DDS

Mesenchymal stem cells (MSCs) were aspirated from iliac crest bone marrow in 5 mature hybrid dogs. The cells were cultured and their osteogenic differentiation potential was evaluated after the third cell passage using Alizarin red staining in experimental conditions. A hydroxyapatite β -tricalcium phosphate (HA/TCP) scaffold was loaded with undifferentiated MSCs. Bilateral bone defects were randomly filled with HA/TCP, Bio-Oss, or HA/TCP + MSCs with an absorbable membrane. Histological and histomorphometric evaluations were conducted after 6 weeks (ANOVA, $p < 0.05$). The empty cavity demonstrated more bone formation than the HA/TCP and Bio-Oss ($p < 0.05$) groups. An MSC-loaded HA/TCP scaffold was a more effective alternative in inducing bone regeneration.

38 **The Dilemma in the Diagnosis of Acute Scrotum: Clinical Clues for Differentiating between Testicular Torsion and Epididymo-Orchitis**

Kai-Jie Yu, MD; Ta-Min Wang, MD; Hsiao-Wen Chen, MD; Hsu-Han Wang, MD

There is no single clinical feature that can reliably distinguish torsion from other causes of testicular pain, especially epididymo-orchitis. Epididymo-orchitis should be highly suspected in patients with abnormal laboratory findings favoring inflammation. On the other hand, if patients present with silence of blood flow signals in color Doppler ultrasound associated with acute onset of pain for a short duration, or manifestations on the left side, testicular torsion should be highly suspected and prompt exploration is mandatory.

46 **The Influence of Self-monitoring Blood Glucose Frequency on the Oscillation of Hemoglobin A1c and Chronic Complications**

I-Chin Huang, MD; Pei-Wen Wang, MD; Rue-Tsuan Liu, MD; Shih-Chen Tung, MD; Jung-Fu Chen, MD; Ming-Chun Kuo, MD; Ching-Jung Hsieh, MD

To investigate the relationship between the frequency of self-monitoring blood glucose (SMBG), fluctuation of hemoglobin A1c (HbA1c), and risks of chronic complications, we enrolled 1052 patients with type 2 diabetes. HbA1c and the frequency of SMBG were recorded every 3 months. The fluctuation in HbA1c was expressed as

standard deviations (SDs) of HbA1cs. We found the frequency of SMBG was negatively correlated with the SDs of HbA1c but not with the average HbA1c. Patients with progression of nephropathy, neuropathy, and retinopathy exhibited greater fluctuation of HbA1cs and less frequent SMBG than patients without progression of these complications. We conclude that frequent SMBG decreases the fluctuation in HbA1c and microvascular complications.

54 Two-incision versus Modified Watson-Jones Total Hip Arthroplasty in the Same Patients—A Prospective Study of Clinical Outcomes and Patient Preferences

Chih-Chien Hu, MD; Jen-Suh Chern, PhD; Pang-Hsin Hsieh, MD; Chun-Hsiung Shih, MD; Steve WN Ueng, MD; Mel S. Lee, MD, PhD

A prospective randomized study of clinical outcomes and patient preferences was performed in 20 patients who had a two-incision total hip arthroplasty (THA) in one hip and a modified Watson-Jones THA in the other. After a minimal follow-up of 2 years, there were no differences in the hospital course, clinical results, functional outcomes, and radiographic results between techniques. However more patients (70%) preferred the two-incision side in the first 6 months regardless which procedure was performed first. We think that the difference in patient preferences might be related to the surgical dissection and manipulation of the hip with the modified Watson-Jones technique.

62 Diagnostic Efficacy of Ultrasonography-Guided Fine Needle Aspiration Biopsy in Evaluating Salivary Gland Malignancy

Yu-Ting Huang, MD; Shih-Ming Jung, MD; Sheung-Fat Ko, PhD; Yao-Liang Chen, MD; Siu-Cheung Chan, MD; En-Haw Wu, MD; Yi-Ming Wu, MD; Yung-Liang Wan, MD; Shu-Hang Ng, MD

From January 2007 to September 2010, 158 patients with salivary gland mass lesions undergoing both ultrasonography-guided fine needle aspiration biopsy (UGFNAB) and surgical excision were reviewed. The diagnostic yield of UGFNAB was 86.7% (137 of 158 patients). The sensitivity, specificity and accuracy of UGFNAB for malignancy were 66.7%, 98.2%, and 92.7%, respectively. No UGFNAB-related complications were encountered. UGFNAB is a safe technique that offers moderate diagnostic yield and sensitivity.

70 Surgical Management of Giant Hepatic Hemangiomas: Complications and Review of the Literature

Hui-Yu Ho, MD; Tsung-Han Wu, MD; Ming-Chin Yu, MD; Wei-Chen Lee, MD; Tzu-Chieh Chao, MD; Miin-Fu Chen, MD, FACS

We retrospectively reviewed 61 patients with giant hepatic hemangioma treated with surgical resection. Eight of these patients developed complications after the operation. Risk factors for complications were large tumor size, the presence of symptoms, increased blood loss, and prolonged surgery. Most complications could be treated conservatively (Grade I). Two patients with grade III complications needed invasive intervention. The complication rate was 13.1% (95% confidence interval 5.8% to 24.2%), and there was no mortality in our series.

79 Hemoglobin Variability Does Not Predict Mortality in Peritoneal Dialysis Patients

Ho-Ching Chen, MD; Kuan-Hsing Chen, MD; Yu-Jr Lin, MS; Chee-Jen Chang, MD, PhD; Ya-Chung Tian, MD, PhD; Chih-Wei Yang, MD, PhD; Cheng-Chieh Hung, MD, PhD

Hemoglobin variability in hemodialysis patients treated with erythropoiesis-stimulating agents has been used to evaluate mortality and comorbidity. Different outcomes have been reported in American and European hemodialysis patients. There are, however, few studies of the effects of hemoglobin variability in peritoneal dialysis patients. Subjects in this retrospective study included patients (n = 363) undergoing outpatient peritoneal dialysis at Chang Gung Memorial Hospital Medical Center for 2 years. Our preliminary study demonstrates that hemoglobin variability does not independently predict mortality in peritoneal dialysis patients. However, there was a longer hospital stay in the high amplitude hemoglobin fluctuation group.

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