

Chang Gung Medical Journal

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REVIEW ARTICLES

- 217 Analysis of Protein Phosphorylation Using Mass Spectrometry**
Hsin-Yi Wu; Pao-Chi Liao, PhD
Mass spectrometry-based strategies are increasingly considered as vital tools that can be utilized for characterization of phosphorylated peptides or proteins. This article summarized current available mass spectrometry-based techniques for the analysis of phosphorylation. Despite numerous approaches have been exploited, comprehensive analysis of protein phosphorylation remain a challenging task. With progressively more improvements of instruments and methodologies, we can foresee the implementation of a comprehensive approach for the analysis of phosphorylation states of proteins.
- 228 Applications of Mesenchymal Stem Cells: An Updated Review**
Kuan-Der Lee, MD, PhD
Mesenchymal stem cells (MSCs) are able to differentiate into multiple cell lineages and are considered the cell type of choice for tissue engineering, because of the ease with which they can be isolated and their capacity of expansion in vitro on a clinical scale. To date a wide variety of experimental animal models of disease as well as human clinical trials have been designed to assess the therapeutic efficacy of MSCs. As this field is rapidly advancing, this review summarizes recent work contributing to the applications of MSC-based cell therapy in human diseases.
- 237 Overview of Laser Refractive Surgery**
Samuel Chao-Ming Huang, MD; Hung-Chi Jesse Chen, MD
Application of excimer laser has significantly contributed to the correction of refractive errors. Combined with other advanced ophthalmological instruments and cumulative knowledge of basic sciences of refractive errors, laser refractive surgery also shows great potential both in terms of safety and efficacy. Both photorefractive keratectomy (PRK) and laser in situ keratomileusis (LASIK) produce stable and predictable results with a safe profile. Despite the advances, certain limitations and complications do exist. In this article, an overview regarding the basic knowledge, surgical issues, clinical outcomes, and complex cases of laser refractive surgery will be demonstrated.

ORIGINAL ARTICLES

- 253 Effects of Insulin and Glucose on Cytokine Production from Peripheral Blood Mononuclear Cells**
Huang-Pin Wu, MD; Chih-Hung Chen, MD; Hul-Chen Hsieh, CNS; Yu-Chih Liu, MD, PhD
Blood glucose levels should be controlled in patients with severe sepsis, regardless of whether they are diabetic. Whether hyperglycemia or insulin influences the cytokine production in circulating cells remains unclear. Cell cultures of lipopolysaccharide stimulated peripheral mononuclear cells (PBMCs) were performed with or without glucose or insulin treatment. Stimulated PBMCs with hyperglycemic status secreted more interleukin (IL)-12 than those with euglycemic status. Insulin treatment did not influence the IL-12 response from hyperglycemic stimulated PBMCs.
- 260 In Vitro and In Vivo Photosensitizing Applications of Photofrin® in Malignant Melanoma Cells**
Cheng-Jen Chang, MD, PhD; Jau-Song Yu, PhD; Fu-Chan Wei, MD, PhD
A study was administered to evaluate the feasibility of photodynamic therapy (PDT) for malignant melanoma cells (MMC) and subcutaneous implanted melanoma cells (SIM) through *in vitro* and *in vivo* processes, respectively. The findings revealed that MMCs incubated with Photofrin® and exposed to laser light at a 630 nm wavelength showed a 50% cell kill. An electron microscopic study demonstrated significant destruction of the target after PDT.
- 268 Clinical Profile and Outcome of First Acute Myocardial Infarction with Ischemic Mitral Regurgitation**
Sheng-Ying Chung, MD; Fen-Chiung Lin, MD; Sarah Chua, MD; Morgan Fu, MD; Chiung-Jen Wu, MD; Hon-Kan Yip, MD; Kuo-Ho Yeh, MD; Han-Tan Chai, MD; Yuan-Kai Hsieh, MD; Chi-Ling Hang, MD; Chih-Yuan Fang, MD; Shyh-Ming Chen, MD; Cheng-Hsu Yang, MD; Chien-Jen Chen, MD; Fan-Yen Lee, MD; Mien-Cheng Chen, MD
This study addressed the contribution of ischemic mitral regurgitation (IMR) to the midterm survival rate of patients following first acute myocardial infarction (AMI). Patients who underwent echocardiographic quantitation of ischemic mitral regurgitation within 30 days after first myocardial infarction (MI) were analyzed. The enrolled population of 519 patients was divided into 2 groups based on mitral regurgitation (MR) severity. Group A included 440 patients with none, trivial, and mild MR. Group B was comprised of 79 patients with moderate and severe MR. The severity of IMR showed a significant inverse relationship with the mid-term post-MI survival rate.

276 Accuracy of a New Body Length-based Formula for Predicting Tracheal Tube Size in Chinese Children

Ming-Hung Shih, MD; Chin-Yang Chung, MD; Bai-Chuan Su, MD; Chao-Tsen Hung, MD; Shu-Yam Wong, MD; Teresa Kit-Man Wong, MD

In general anesthesia and critical care practice for children, accuracy of the endotracheal tube (ETT) size selection is important. Traditional age-based formulas often fail to predict the correct ETT size. In our study, a new length-based formula, ETT internal diameter (ID) (mm) = 2 + body length in cm/30, has a high accuracy in predicting the appropriate ETT size in Chinese children.

281 Relationship between Unstimulated Salivary Flow Rate and Saliva Composition of Healthy Children in Taiwan

Katie P. Wu, MD; Jyh-Yuh Ke, MD; Chia-Ying Chung, MD; Chia-Ling Chen, MD, PhD; Tsong-Long Hwang, PhD; Ming-Yen Chou, DDS, MD; Alice M. K. Wong, MD; Ching-Fang Hu, MD; Yu-Cheng Lee, MD

Salivary flow rate and saliva composition change throughout development and during disease. In view of the shortage of data, 44 normal, healthy children from 3-14 years of age were recruited to receive analysis of salivary flow rate, pH and saliva composition under unstimulated conditions. The information obtained may serve as reference values for the growing interest in saliva as a diagnostic tool, especially monitoring those with neurological or oral motor dysfunction.

287 Long-term Anterior Thalamus Stimulation for Intractable Epilepsy

Siew-Na Lim, MD; Shih-Tseng Lee, MD; Yu-Tai Tsai, MD; I-An Chen, MD; Po-Hsun Tu, MD; Jean-Lon Chen, MD; Hsiu-Wen Chang, MD; Yu-Chin Su, MD; Tony Wu, MD, PhD

In this open-label pilot study of anterior thalamic nucleus (ATN) stimulation, we investigated four cases of intractable epilepsy, with a follow up of 2 years. Twenty-one similar cases reported in the literature were reviewed. Insertion into and stimulation through electrodes implanted in the ATN decreased seizure frequency, with a mean reduction of 49.6% in the current series. Two patients had seizure reduction of $\geq 60\%$. The findings were consistent with those in four other investigations, which showed an overall rate of 45-55% in seizure reduction. It appears reasonable to conclude that long-term ATN stimulation is a safe and effective treatment for intractable epilepsy.

297 Diurnal Change of Respiratory Muscle Strength in Patients with Sleep-disordered Breathing

Mao-Chang Su, MD; Chien-Hung Chin, MD; Yung-Che Chen, MD; Yu-Tang Hsieh, MD; Chin-Chou Wang, MD; Yi-Chuan Huang, MD; Meng-Chih Lin, MD

We demonstrated that the maximal respiratory strength of patients with sleep-disordered breathing (SDB) improves after nocturnal sleep, and this increment was not correlated to the severity of SDB. This suggests that nocturnal sleep has a restorative effect on respiratory muscles regardless of the severity of sleep impairment by SDB. It also indicates that respiratory muscles are relatively resistant to increased load and intermittent hypoxia during nocturnal obstructive respiratory events.

304 Expanding the Donor Pool - Preliminary Outcome of Kidney Recipients from Infected Donors

Hsu-Han Wang, MD; Sheng-Hsien Chu, MD; Kuan-Lin Liu, MD; Yang-Jen Chiang, MD

We included the transplantation of organs from infected cadaveric donors in order to increase graft sources. Under reasonable surveillance and antibiotic treatments, kidneys procured from infected donors worked well without infection transmission or complications. We were unable to detect any significant differences in renal functions and blood/urine white counts between the infected and non-infected groups. Short-term graft and patient survival rates were both 100%.

CASE REPORTS

309 An Incomplete Pentalogy of Cantrell

Shi-Min Yuan, MD; Amihay Shinfeld, MD; David Mishaly, MD

Pentalogy of Cantrell is a rare entity of congenital defects involving the abdominal wall, sternum, diaphragm, pericardium and heart. We report a 47-day-old girl with an incomplete pentalogy of Cantrell presenting with congenital absence of the sternum, congenital heart defects, an epigastric hernia, and asymmetric kidneys. The cardiac and renal defects were even rarer manifestations of this disorder in this patient.

314 Epstein-barr Virus Associated Extranodal Natural Killer T Cell Lymphoma of Nasal Type Mimicking Pyogenic Osteomyelitis of the Proximal Humerus

To Wong, MD; Jih-Yang Ko, MD; Feng-Sheung Wang, PhD; Yi-Ju Chen, MD; Ming-Chun Ma, MD
Extranodal natural killer (NK) cell lymphoma/leukemia of the nasal type is rare but highly aggressive. A male patient with a shoulder injury, was admitted after subacromial injection, and showing signs and symptoms of fever, local erythema, elevated erythrocyte sedimentation rate and C-reactive protein. Radiological evidence of shoulder pathology was treated as a musculoskeletal infection. Subsequently, a biopsy was performed due to inadequate response to antibiotic therapy. The results revealed the pathology was Epstein-barr virus (EBV) associated NK/T cell lymphoma of the proximal humerus. The purpose of this case report was to emphasize the unusual presentation of a neoplasm mimicking osteomyelitis.

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