

Chang Gung Medical Journal

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SPECIAL EDITION: **MITOCHONDRIA IN THE PATHOGENESIS OF DISEASES**

346 The Role of Mitochondria in Cholestatic Liver Injury

Mao-Meng Tiao, MD; Tsu-Kung Lin, MD; Pei-Wen Wang, MD; Jin-Bor Chen, MD;
Cha-Wei Liou, MD

Disturbance of the oxidant-antioxidant balance, especially in mitochondria, may be responsible for cholestatic liver injury in cholestasis rats. The mechanisms of cholestasis stress in terms of mitochondrial oxidants and the antioxidant imbalance in mitochondria are poorly understood. This review describes recent developments in the pathogenesis of cholestasis from the viewpoint of mitochondrial biogenesis.

354 Clinical and Molecular Aspects of Diseases of Mitochondrial DNA Instability

Chih-Chieh Mao, MD, PhD; Ian J. Holt, PhD

Mitochondrial DNA (mtDNA) is arranged in nucleoprotein complexes, or nucleoids. This review reports the molecular and cellular characteristics of mitochondria and mtDNA, and the proteins involved in the metabolism of mtDNA. Integrated information about mitochondrial nucleoids, especially the recently identified ATAD3 protein, is also included. For ease of understanding, mitochondrial DNA diseases are categorized as those in which mtDNA is the primary cause, and those in which nuclear DNA defects are the cause of mtDNA perturbations. Lastly, the importance of mitochondrial nucleoids is emphasized in the context of the pathogenesis of mtDNA instability.

370 Mitochondrial Dysfunction and Psychiatric Disorders

Shaw-Hwa Jou, MD; Nan-Yin Chiu, MD; Chin-San Liu, MD, PhD

The authors reviewed recent results of studies and tried to delineate current understanding of the correlation between mitochondrial dysfunction and psychiatric disorders. It is possible that the new data will lead to a focus on psychiatric disorders as metabolic diseases. Treatment with psychotropics might ultimately enhance energy metabolism and reduce the damage of oxidative stress. Further studies of mitochondrial dysfunction in patients with psychiatric disorders are expected to be useful for the development of cellular disease markers and new psychotropic drugs.

ORIGINAL ARTICLES

380 Distinctions between Spatial and Verbal Working Memory: A Study Using Event-related Potentials

Yung-Nien Chen, MD, PhD; Suvobrata Mitra, PhD

An experiment using event-related potentials and N-back tasks was applied for investigation of spatial-verbal dichotomy of working memory. The major difference between spatial and verbal tasks was not found in left-right lateralization but in different presentations of components.

390 Transnasal Butorphanol for Pain Relief after Uvulopalatopharyngoplasty – A Hospital-based, Randomized Study

Hao-Chun Huang, MD; Li-Ang Lee, MD; Tuan-Jen Fang, MD; Hsueh-Yu Li, MD;
Ching-Chia Lo, MD; Jo-Hsuan Wu, MD

This prospective, randomized, open label, single center study was conducted to assess and to compare pain alleviation effect of transnasal butorphanol and oral mefenamic acid/intramuscular meperidine after uvulopalatopharyngoplasty in a group of obstructive sleep apnea patients. Both treatments showed effectiveness in pain relief as the aforementioned pain parameters improved. No significant differences in the degree of improvement, pain and related morbidities, and quality of life in bodily pain existed between the two groups. Therefore, it was demonstrated that transnasal butorphanol exhibited comparable safety and efficacy in oral mefenamic acid/intramuscular meperidine in treating wound pain in selected patients undergoing oropharyngeal surgery.

- 400 Spectrum and Outcome Analysis of Marked Neonatal Hyperbilirubinemia with Blood Group Incompatibility**
Yi-Hao Weng, MD; Ya-Wen Chiu, PhD
The current survey illustrates the clinical features and outcome analysis of neonates with blood group incompatibility who had a peak total serum bilirubin value ≥ 20 mg/dL. Hemolysis plays an important role in the development of extreme hyperbilirubinemia. Rh incompatibility, in spite of its rarity, results in more severe hyperbilirubinemia than ABO incompatibility. Blood group incompatibility is an essential risk factor of kernicterus.
- 409 Switching of Antipsychotics to Aripiprazole in the Treatment of Schizophrenia**
Huang-Chi Lin, MD; Mian-Yoon Chong, MD, PhD, FRCPsych; Yu Lee, MD; Wei-Chiang Yeh, MD; Pao-Yen Lin, MD, PhD
This observational study reports on shifting from other antipsychotics to aripiprazole in patients with schizophrenia, with further analysis of factors related to successful switching. Forty-five patients were included in this study. About 70% successfully completed the switch. Patients who had been taking second-generation antipsychotics (SGAs), had less clinically severe disease, or had a shorter illness course were able to make a smoother transition to aripiprazole.
- 417 Simultaneous Transurethral Resection of Prostate and Prostate Needle Biopsy in Patients with Acute Urinary Retention and Elevated Prostate Specific Antigen Levels**
Yen-Ta Chen, MD; Po-Hui Chiang, MD, PhD; Chun-Chien Hsu, MD
To evaluate the safety and accuracy of simultaneous transrectal ultrasonography (TRUS)-guided prostate biopsy and transurethral resection of prostate (TURP), patients with acute urinary retention (AUR) who underwent simultaneous prostate biopsy and TURP were compared with those treated by TURP alone. From July 2000 to Jun 2004, 21 patients older than 70 years with AUR were included in each group. Patients with elevated prostate specific antigen (PSA) levels (> 4 ng/ml) underwent TURP and TRUS-guided biopsy simultaneously (group I), while those with normal PSA levels (< 4 ng/ml) received TURP alone (group II). Simultaneous TURP and TRUS-guided biopsy in healthy AUR patients did not increase the risk of morbidity.
- 423 Supplementation with Cup-feeding as A Substitute for Bottle-feeding to Promote Breastfeeding**
Ya-Yi Huang, RN, MSN; Meei-Ling Gau, RN, PhD; Chiu-Mieh Huang, RN, PhD; Jian-Tao Lee, RN, PhD
A longitudinal study explored the differences in infant sucking competence, infant sucking behavior and maternal milk supply among groups with exclusive breastfeeding, breast-feeding with cup supplementation and breast feeding with bottle supplementation. Some indicators of breastfeeding were similar in the exclusive breastfeeding group and cup supplementation groups. Cup-feeding was better than bottle-feeding when supplementary formula was needed for medical treatment.
- 432 Three-step Needle Withdrawal Method: A Modified Technique for Reducing the Rate of Pneumothorax after CT-guided Lung Biopsy**
Hung-Jung Wang, MD; Ting-Kai Leung, MD; Chi-Ming Lee, MD; Ya-Yen Chen, MS
We report our preliminary experience with a three-step needle withdrawal technique for CT-guided lung-biopsy, with emphasis on reduction of the pneumothorax rate. We used a 17-gauge coaxial needle for guidance and an 18-gauge cutting needle to perform the biopsy. We used a three-step method to withdraw the needle. Our pneumothorax rate was 15.8%. Our biopsy technique with the three-step needle-withdrawal method appears effective with a relatively low pneumothorax rate. Predictors of pneumothorax in our study were a lesion deeper than 4 cm and a lesion smaller than 2 cm.
- 438 Airway Function and Respiratory Resistance in Taiwanese Coal Workers with Simple Pneumoconiosis**
Shieh-Ching Yang, MD; Yu-Fan Lin, MS
Spirometric indices and respiratory resistance (Rrs) in 71 miners with simple coal workers' pneumoconiosis (CWP) and 36 healthy subjects were compared. There was a decrease in forced expiratory volume in 1 second (FEV1) and an increase in Rrs at 3 Hz with more severe disease. Lung volumes were well-preserved. The authors conclude that airway obstruction is the major functional abnormality in the early progression of CWP. The forced oscillation technique may be a sensitive tool for detecting this dysfunction in miners with CWP associated or not with a reduced FEV1.

447 The Use of A Hollow Polymethylmethacrylate Cervical Spacer with Plating in the Treatment of Single Level Cervical Disc Disease

Jyi-Feng Chen, MD; Chieh-Tsai Wu, MD; Shih-Tseng Lee, MD

From January 2002, a prospective study was designed for patients who underwent single-level anterior cervical discectomy and fusion (ACDF) with a hollow polymethylmethacrylate (PMMA) spacer filled with cancellous allograft and plate stabilization. The purpose of this study was to evaluate the efficacy of these changes, and to prove this method has the same efficacy as other methods. Patients were followed for a minimum of 2 years. There were no complications related to the hollow PMMA spacer. This procedure has a high fusion rate, and can restore disc height and maintain normal cervical lordosis. This method achieves results similar to those of other methods.

CASE REPORTS

455 Anomalous Origin of the Right Coronary Artery from the Left Coronary Sinus

Shi-Min Yuan, MD; Salis Tager, MD; Ehud Raanani, MD

The anomalous origin of the right coronary artery from the left coronary sinus is a rare congenital anomaly. We present a 61-year-old male patient who manifested a single episode of chest pain, was diagnosed with anomalous origin of the right coronary artery from the left coronary sinus, suggest and discuss surgical treatment.

459 The Effects of A Gluten and Casein-free Diet in Children with Autism: A Case Report

Chia-Lin Hsu, MD; Delmar C.Y. Lin, MD; Chia-Lin Chen, MD, PhD; Chin-Man Wang; Alice M.K. Wong, MD

A boy with autism was subjected to a gluten and casein-free diet at 42 months old. The inclusion of the regulated diet showed significant improvement in his growth, development and vitality. Despite the lack of consensus on the benefits of dietary intervention in patients with autism, we are suggesting an adjuvant therapy that is simple, safe and economical. In addition, the therapy may be more feasible in Taiwan as opposed to western countries because of cultural factors such as dietary preference and product availability.

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