

The New Era of Chang Gung Medical Journal

Chang Gung Medical Journal has been labeled as a journal of high quality by the National Science Council every year. This status has been achieved after 28 years of hard work, but it also would not have been possible without the support of many friends and colleagues. The journal will continue to raise its quality, working towards providing readers with the latest, core medical information as well as establishing itself as an international journal in the days to come.

In order to provide readers with high quality articles, Chang Gung Medical Journal will become a bimonthly journal from 2006. Its main focus will be on original, research papers and expanding the areas of discussion. The journal will also cover more basic science related topics. Furthermore, the journal will soon push for online manuscript submission to help make the submission process easier and more efficient for authors, and to make the review process quicker and more accessible for reviewers.

Chang Gung Medical Journal will strive to supply high standard medical information to its many friends and colleagues whom it hopes will continue to lend their support.

感謝大家對長庚醫誌的愛護，經過28年的耕耘，本刊連年獲得國科會優良期刊之肯定。未來仍將一本初衷，持續提升雜誌品質，提供讀者核心、即時的醫學新知，並希望將此一區域性雜誌朝國際級期刊邁進。

為提供質優量精的優良論文，自2006年起，擴充版面並改版為雙月刊，逢雙月發刊。內容上將以原著、研究論文為主，廣邀學術研討會專題，並增加基礎醫學領域之論文。此外，未來將推動線上稿件作業系統，以簡化流程及提升審查時效。

期許以一步一腳印的努力及堅持，敬請舊雨新知持續支持與指教。

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SPECIAL SECTION: NEW TRENDS IN HUMAN REPRODUCTION

2 **Genomic Analyses of the Evolution of LGR Genes**

Ching-Wei Luo, PhD; Aaron J. W. Hsueh, PhD

Recent completion of the sequencing of genomes from several mammals, teleosts and invertebrates has shown that G protein-coupled receptors (GPCRs) are one of the conserved groups of cell surface receptors with an ancient origin. GPCRs play important roles in diverse physiological functions and are the most important targets for pharmaceutical discoveries. Recent work based on the search for gene with structural similarity to LH, FSH and thyroid-stimulating hormone (TSH) receptors in diverse genomes has led to the identification of a group of GPCRs called Leucine-rich repeat-containing, G protein-coupled Receptor (LGR). We present the genomic analyses of the evolution of LGR genes in the literature.

9 **Embryo-Endometrial Interaction**

Carlos Simón Valles, MD; Francisco Domínguez, PhD

Many molecules (hormones, cytokines, integrins, enzymes, etc) take part in the dialogue between the human blastocyst and the maternal endometrium to achieve implantation. Here, we present our published data on the embryonic regulation of endometrial epithelial molecules such as chemokine receptors and the leptin system.

15 **Applications of Microarray in Reproductive Medicine**

Huei-Wen Chen, PhD; Chii-Ruey Tzeng, MD, M.PH.

Recently, cDNA microarray (DNA chip) technology has become very popular in almost every field of biomedical research. This special section collects and discusses recent studies of microarray-related techniques applied in oocyte fertilization, early embryo development, implantation and some infertility-related diseases (endometriosis and myoma).

25 **The Cytokine Network during Embryo Implantation**

Hong-Yuan Huang, MD

Embryo implantation is an essential step in mammalian pregnancy. Understanding the molecular factors involved in each phase of the implantation process is critical to comprehending the mechanisms, which control reproduction, especially in human *in vitro* fertilization (IVF) program. This paper will focus on the role of two distinctive cytokines, the interleukin-1 (IL-1) and interleukin-18 (IL-18) systems; matrix metalloproteinases (MMP) and their inhibitors, and the vascular endothelial growth factor (VEGF) system during early embryonic development and implantation.

REVIEW ARTICLE

37 **The Emerging Functionality of Endogenous Lectins: A Primer to the Concept and a Case Study on Galectins including Medical Implications**

Hans-Joachim Gabius, PhD; Albert M. Wu, PhD

The translation of the information presented in oligosaccharide determinants to biological responses is carried out by lectins. Recognition of foreign glycosignatures in innate immunity, regulation of cell-cell/matrix interactions, cell migration or growth, and intra- and intercellular glycan routing represent physiologically far-reaching lectin-carbohydrate functionality. Biochemical and biophysical studies are beginning to unravel the intricacies of the selection of a limited set of endogenous ligands, such as certain integrins or ganglioside GM₁. Further insights into the functional consequences of the sugar code's translation are thus expected to have notable repercussions for diagnostic and therapeutic procedures.

ORIGINAL ARTICLES

63 ***Schisandra Chinensis* Protects against Adriamycin-Induced Cardiotoxicity in Rats**

Jyh-Sheng You, MD, PhD; Tai-Long Pan, PhD; Yu-Chang Hou, MD

The purpose of this study is to investigate the protective effects of *Schisandra chinensis* (SC) on adriamycin (ADR) induced cardiotoxicity. Oral administration of SC before and concurrent with intraperitoneal injections of ADR significantly attenuated the myocardial effects. It also reduced mortality rate and the amount of ascites. In addition, indexes in myocardial GSHPx, macromolecular biosynthesis and SOD activities increased with a concomitant decrease in lipid peroxidation. The results suggested that SC may give protection against ADR-induced cardiotoxicity in rats.

71 **Surgical Treatment for Giant Cell Tumor of the Thoracolumbar Spine**

Shih-Chieh Yang, MD; Li-Huei Chen, MD; Tsai-Sheng Fu, MD; Po-Liang Lai, MD; Chi-Chien Niu, MD; Wen-Jer Chen, MD

Eleven patients with grade III giant cell tumor (GCT) of the thoracolumbar spine were treated between 1992 and 2002. Three patients were initially treated at other institutions. Adjuvant radiotherapy was employed for local recurrence in these three patients. The other eight patients were initially treated with marginal excision. Five patients had tumor recurrence. The study presents the clinical experience and offers a suitable treatment for Grade III GCT and recurrent GCT of the thoracolumbar spine.

79 **Ipsilateral Femoral Neck and Shaft Fractures Treated with Russell-Taylor Reconstruction Intramedullary Nails**

Hsuan-Kai Kao, MD; Chi-Chuan Wu, MD; Po-Cheng Lee, MD; Chun-Yi Su, MD; Kuo-Feng Fan, MD; I-Chuan Tseng, MD

Fifteen ipsilateral femoral neck and shaft fractures were treated with Russell-Taylor reconstruction intramedullary nails. Postoperatively, protected weight bearing was permitted as early as possible. The median operating time was 250 minutes (range 125-430 min) and median blood loss was 300 ml (range 100-600 ml). Thirteen patients were followed-up for a median of 22 months (range 13-45 months). The union rates for neck fractures and shaft fractures were 84.6% and 69.2% respectively. The median union times were 3.0 months for neck fractures and 8.5 months for shaft fractures.

86 **Complications of Hip Arthroscopy: Analysis of Seventy Three Cases**

Yang-Pin Lo, MD; Yi-Sheng Chan, MD; Li-Chang Lien, MD; Mel S-S Lee, PhD; Kuo-Yao Hsu, MD; Chun-Hsiung Shih, MD

We report our experience with 73 hip arthroscopy procedures and complications. With the patient in a supine position with the involved leg in traction, 2 or 3 portals (anterior, anterolateral or posterolateral) were made. Intraoperative and postoperative arthroscopic complications were recorded and prospectively analyzed. During surgery, 12 of 73 (16.4%) patients had mild scope trauma to the femoral head. Five (7%) patients had transient sciatic nerve neuropraxia and achieved complete recovery within 2 weeks after surgery. No major complications of hip arthroscopy were noted in this series. With experience in the technique and good hip arthroscopic instrumentation, hip arthroscopy complications can be minimized.

93 **Transforaminal Epidural Steroid Injection for Discectomy Candidates: An Outcome Study with a Minimum of Two-Year Follow-up**

Shih-Chieh Yang, MD; Tsai-Sheng Fu, MD; Po-Liang Lai, MD; Chi-Chien Niu, MD; Li-Huei Chen, MD; Wen-Jer Chen, MD

This study evaluates the therapeutic effect of a modified approach to epidural steroid injection for discectomy candidates. Twenty-one patients with sciatica due to herniated disc received injections of betamethasone in combination with xylocaine. Outcome was evaluated by JOA score before the procedure and at the final follow-up. The final analysis comprised 19 patients with a minimum of 24-month follow-up. The JOA score increased significantly from 14.26 ± 3.25 before injection to 23.38 ± 4.46 after injection. In selected cases, the procedure significantly alleviated the severity of sciatica due to herniated disc, improved patient's daily activity and reduced the need for surgical decompression.

100 The Effectiveness of an Aerobic Exercise Intervention on Worksite Health-Related Physical Fitness - A Case in a High-Tech Company

Chia-Lin Li, PhD; Hsu-Min Tseng, PhD; Rou-Fang Tseng, MS; Shwn-Jen Lee, PhD

This study was conducted as a prospective quasi-experimental design to evaluate the effects of aerobic exercise in a high-tech company. Among the 54 subjects enrolled in the study, 26 subjects of the volunteers agreed to participate in an aerobic exercise program, and 28 subjects were in the control group. Subjects in the exercise group attended a 12-week aerobic exercise program, while subjects in the control group did not attend. The results of this study indicated that one 12-week aerobic exercise program was effective in improving the abdominal muscle strength and endurance of employees of a high-tech company.

107 Clinical Spectrum of Meningococcal Infection in Infants Younger than Six Months of Age

Hsuan-Rong Huang, MD; Hui-Ling Chen, DDS, MS; Shih-Ming Chu, MD

A total of 10 male infants younger than 6 months old had meningococcal disease at our hospital from 1994 through 2004. The most common manifestation was meningitis (70%), in which patients commonly presented with vomiting and seizure attack. Penicillin was the drug of choice with the low resistance strain. Prolonged antimicrobial treatments were required in six patients complicated with subdural empyema. No deaths were documented. Two patients developed long-term sequelae. One had insufficient therapy and another one was infected by a penicillin resistant strain. Brain image confirmed the presence of encephalomalacia which increased the risk of permanent neurologic deficit.

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