



## Dissolution of Diclofenac Sodium from Matrix Tablets

Ming-Thau Sheu<sup>a</sup>, Huei-Lan Chou<sup>a</sup>, Ching-Cheng Kao<sup>a</sup>, Cheng-Hsiung Liu<sup>a</sup>

and Theodore D. Sokoloski<sup>b</sup>

<sup>a</sup>*School of Pharmacy, Taipei Medical College, Taipei (Taiwan, ROC) and* <sup>b</sup>*SmithKline Beecham Pharmaceuticals, UW2913, P.O. Box 1539, King of Prussia, PA 19406 (USA)*

### ABSTRACT

Several parameters were studied for their effect on the dissolution of diclofenac sodium from Voltaren SR and hydroxypropyl-methylcellulose (HPMC) based matrix tablets. The results indicate that addition of sodium or potassium chloride to the dissolution medium decreases the solubility of the drug and slows the dissolution rate, with the effect of sodium chloride being greater. The dissolution of the drug was studied in a medium which simulates the changing pH of the pathway followed by the drug as it passes from the stomach to the intestine. Dissolution was found to be inversely related to the rate at which the pH was changed. This may be caused by the deposition of an insoluble drug layer when contact is made with an acid medium. When higher viscosity grades of HPMC are used, slower release rates result. Drug release from Voltaren SR is best described as non-Fickian in an aqueous medium irrespective of whether salt is added; However, a zero-order dependence became evident in pH-changing media. The release of diclofenac sodium from the hydrophilic HPMC matrices follows a non-Fickian transport in all media.

**Key words:** Hydroxypropylmethylcellulose; Diclofenac sodium; Salt effect; pH-changing medium; Hydrophilic matrix

# Mouse Mammary Tumor Virus Gene Expression Is Suppressed by Oligomeric Ellagitannins, Novel Inhibitors of Poly (ADP-ribose) Glycohydrolase

Yan-Jyu Tsai †, Tsutomu Aoki §, Hideharu Maruta §, Hideaki Abe §,  
Hirohi Sakagami ††, Tsutomu Hatano ††,  
Takuo Okuda ††, and Sei-ichi Tanuma §\*\*

*From the † Department of Pharmacology, Faculty of Medical Sciences, Taipei Medical College, 250 Wu-Hsing Street, Taipei, Taiwan, Republic of China, the § Department of Life Science, Faculty of Bioscience and Biotechnology, Tokyo Institute of Technology, Yokohama, Kanagawa 227, Japan, the †† First Department of Biochemistry, School of Medicine, Showa University, Shinagawa-ku, Tokyo 142, Japan, and the †† Faculty of Pharmaceutical Sciences, Okayama University, Tsushima, Okayama 700, Japan*

## ABSTRACT

Oligomeric ellagitannins (nobotanins B, E, and K) were found to be potent inhibitors of poly (ADP-ribose) glycohydrolase purified from mouse mammary tumor 34I cells. Kinetic analysis revealed that the inhibition of nobotain B (dimer) was competitive with respect to the substrate poly (ADP-ribose), whereas nobotanin E (trimer) and nobotanin K (tetramer) exhibited mixed-type inhibition. These results suggest that the dimeric structure of ellagitannin may have a functional domain that competes with poly(ADP-ribose) on the poly(ADP-ribose) glycohydrolase molecule. To determine the inhibitory effects of oligomeric ellagitannins on poly(ADP-ribose) glycohydrolase *in vivo*, we examined their effects on de-poly(ADP-ribosyl)ation of some chromosomal proteins in intact 34I cells that was induced by glucocorticoid treatment. Nobotanin B caused concentration-dependent inhibition of glucocorticoid-induced de-poly(ADP-ribosyl)ation of HMG 14 and 17 and histone H1 in intact 34I cells. Interestingly, this inhibition was associated with suppression of the glucocorticoid-sensitive mouse mammary tumor virus (MMTV) mRNA synthesis. In contrast, nobotanin E and K had little inhibitory effect on either de-poly(ADP-ribosyl)ation of these proteins or induction of MMTV transcription after glucocorticoid treatment. Nobotanin B but not E and K was taken into 34I cells. These results may suggest that the suppression of glucocorticoid-sensitive MMTV transcription results from *in vivo* inhibition of poly (ADP-ribose) glycohydrolase by nobotanin b. These results also indicate the importance of de-poly(ADP-ribosyl)ation of HMG 14 and 17 and histone H1 in regulation of transcription of the glucocorticoid-sensitive MMTV gene.

# Total Dietary Fiber Content of Polished, Brown and Bran Types of Japonica and Indica Rice in Taiwan: Resulting Physiological Effects of Consumption

Hsing-Hsien Cheng,

*Ph. D. School of Nutrition & Health Science, Taipei Medical College, Taiwan, R. O. C.*

## ABSTRACT

Total dietary fiber (TDF) content of polished, brown and bran of four types of Japonica rice and four types of Indica rice grown in Taiwan was analyzed. The effect on lipid metabolism in hamsters of polished, brown and bran of the TNG67 variety of rice was also investigated. The eight polished rice varieties had less TDF (mean 1.25%), and polished rice of TNG67 had the least TDF (0.22%). The eight rice brans had more TDF content than the polished or brown rice. The eight brown rice varieties all had twice the TDF content of the eight polished rices, except for TNG67, which had 12 times the TDF content. The TDF content of Japonica rice bran was higher than the TDF content of Indica. The rice bran of TN9 had the highest TDF (33.6%,  $p < 0.05$ ) and TCS3, the lowest (23.3%,  $p < 0.05$ ). Total cholesterol, LDL-cholesterol and HDL-cholesterol content were studied. Total cholesterol and LDL-cholesterol of the serum of hamsters fed different TDF diets for six weeks were significantly lowered by rice bran ingestion.

**KEY WORDS:** Total dietary fiber, Rice, Hamster

## The Incidence of Bladder Cancer in the Black Foot Disease Endemic Area in Taiwan

H. S. CHIANG, H. R. GUO, C. L. HONG, S. M. LIN and E. F. LEE

*Departments of Urology and Public Health, Taipei Medical College; Department of Pathology, National Taiwan University Hospital, Taipei, Taiwan, Republic of China*

### ABSTRACT

A high incidence of bladder cancer (23.53/100,000 population per annum from 1981-1985) was found in an endemic area of peripheral vascular disease known as black foot disease (BFD) on the southwest coast of Taiwan. The average incidence of bladder cancer in the whole of the Taiwan area was 2.29/100,000 during the same period.

The incidence of female bladder cancer (21.10/100,000) in this area was also high. The ratio of male to female bladder cancer in the BFD endemic area and the neighbouring area was 1.24 and 1.09, lower than that in the whole Taiwan area (2.75) and elsewhere around the world. The high content of arsenic and the high concentration of a "fluorescent substance" in artesian well water in this area are the only 2 related factors identified so far. Determination of the actual carcinogen requires further investigation.

# Pregnancy After Combined Ivf And Surgery At A Single Laparotomy In A Patient With Severe Endometriosis Who Failed Four Previous Ivf Attempts

Chii-Ruey Tzeng<sup>1</sup>, Ming-Jer Chen<sup>2</sup>, Xing-Ru Ou-Yang<sup>3</sup>

<sup>1</sup>*Division of Family Planning, Dept. of Obstetrics and Gynecology, Taipei Medical College Hospital, Taipei, Taiwan 10502.*

<sup>2</sup>*Dept. of Obstetrics and Gynecology, Veterans General Hospital-Taichung, Taiwan.*

<sup>3</sup>*Dept. of Obstetrics and Gynecology, Veterans General Hospital-Taipei, Taiwan.*

## ABSTRACT

The laparotomy was observed to not interfere with the establishment of normal pregnancy. The combined in vitro fertilization and embryo transfer (IVF/ET) and surgery approach employed as a treatment modality for patients with moderately accessible ovaries and large central endometrial cysts could possibly have an advantage over IVF/ET alone. A successful experience with concomitant oocyte recovery for IVF and laparotomy was reported here for the treatment of advanced endometriosis. The resection of endometriosis could potentially provide a better environment including more normal endocrinological milieu for implantation and embryo growth; this, however, still requires further investigation. Key words: endometriosis, IVF, laparotomy

## Mutagenicity of Drinking Well Water

Fung-Jou Lu<sup>1</sup>, Ching-Lin Hong<sup>2</sup>, Ming-Fen Lu<sup>1</sup>, and Hidesuke Shimizu<sup>3</sup>

<sup>1</sup>Department of Biochemistry, College of Medicine, National Taiwan University, Republic of China;

<sup>2</sup>Department of Public Health, Taipei Medical College, Republic of China; and

<sup>3</sup>Department of Public Health, Jikei University, School of Medicine, Tokyo, Japan

### ABSTRACT

Residents in the southwest coast of Taiwan suffer from high levels of skin, liver, lung and bladder cancers. The high content of arsenic in the drinking well water may be associated with the high incidence of cancers in the area (Chen et al. 1985). This paper reports that mutagens (or carcinogens) other than arsenic are present in the drinking well water of that area.

## **Suicidal Behavior in Taiwan, in K. L. Peng and W. S. Tseng (Eds.) Suicidal Behavior in the Asia-Pacific Region.**

Chong MY, Yeh EK, Wen JK

### **ABSTRACT**

This chapter reports some major findings of suicidal behavior in Taiwan during the past 4 decades after the World War II.

Suicidal patterns in the postwar period and the first two decades showing a bimodal peak in the young and the old was similar to that of Japan during the same period. Taiwan had been under Japanese administration for the 50 years prior to World War II, and the social structure in Taiwan during that period manifested many similarities to Japanese society, which may account for the similarities in suicide distribution. However, this trend has changed in the past decades and now follows a pattern similar to that of many European and North American nations where suicide rates show a steady increase with age. The present rates are even lower than that of Japan and most European countries.

There were persistently higher rates of suicide attempts in females over the last twenty years. However, it should be noted that two different samples were used in this present study and that conducted twenty years ago. While precipitin factors for suicide attempts varied, it is worth mentioning that illegal financial loans leading to economic difficulty and bankruptcy are becoming more frequent, and the common reasons for these loans are illegal gambling and stock market speculation.

Methods of suicidal behaviour have not changed much over time. Poisoning, either by drugs, chemicals, or pesticides still remain the method of choice. This is true for both attempted and completed suicide. It reflects the socio-ecological conditions in a developing country where the above substances are quite easily available and controls over these substances are lax.

The correlation of national suicide rates with social, political, and economic indicators has been stressed by Durkheim. This study has shown that the pattern of suicide in Taiwan in the past four decades is related to the dynamic interaction between individuals and changes in the social, economic and political environment. These findings support the notion that suicide behaviour is a psychosocial behaviour, subject to cultural influences, particularly in times of rapid societal change.



# Studies on Morphological Characteristics of Korean *Taenia saginata taiwanensis* from Korea (Cheju Strain)

P. C. Fan, W. C. Chung\*, C. Y. Lin and C. T. Soh\*\*

*Department of Parasitology, National Yangming Medical College,*

*\*Department of Parasitology, Taipei Medical College, Taipei, Taiwan, Republic of China*

*\*\*Department of Parasitology, Wonkwang University, Iri, Chollabuk-do, Korea*

## ABSTRACT

The present report is of an extensive investigation on the morphology of the adult and cysticercus stages of Korea *Taenia* (Cheju strain). The data on the adult worm are based on seven worms (two with scolex and five without) obtained from three infected persons. The worms weighed an average of 19.3gm (12~30gm) and averaged 432 cm (303~665 cm) long with 760 (640~954) proglottides. The scolices averaged 458  $\mu\text{m}$  (440~457  $\mu\text{m}$ )  $\times$  805  $\mu\text{m}$  (789~825  $\mu\text{m}$ ), sucker 326  $\mu\text{m}$  (310~341  $\mu\text{m}$ )  $\times$  236  $\mu\text{m}$  (230~242  $\mu\text{m}$ ), and rostellum 109  $\mu\text{m}$  (108~110  $\mu\text{m}$ )  $\times$  110  $\mu\text{m}$  (108~110  $\mu\text{m}$ ). In the mature proglottid, there were 832 (640~1,034) testes which covered the whole dorsal side of the proglottid except for behind the vitellaria. The two ovaries averaged 430  $\mu\text{m}$  (250~610  $\mu\text{m}$ )  $\times$  301  $\mu\text{m}$  (175~550  $\mu\text{m}$ ) on the left and 418  $\mu\text{m}$  (260~630  $\mu\text{m}$ )  $\times$  296  $\mu\text{m}$  (175~485  $\mu\text{m}$ ) on the right. The vitellariae averaged 589  $\mu\text{m}$  (410~840  $\mu\text{m}$ )  $\times$  138  $\mu\text{m}$  (75~185  $\mu\text{m}$ ) and the mehlis gland 93  $\mu\text{m}$  (75~110  $\mu\text{m}$ ) in diameter. The cirrus pouch did not extend to the excretory vessel and the vagina had a sphincter. In the gravid proglottid, there were 18 (13~24) uterine branches, 2 (0~5) buds, and 59 (23~102) twigs present on the left side. Those on the right side averaged 18 (13~24), 2 (0~5), and 61 (35~1010), respectively. The length, width and thickness of the inner shell (embryophore) of the fixed eggs were 32  $\mu\text{m}$  (26~36  $\mu\text{m}$ ), 26  $\mu\text{m}$  (20~30  $\mu\text{m}$ ), and 1.2  $\mu\text{m}$  (1~2  $\mu\text{m}$ ), respectively. The oncospheres averaged 20  $\mu\text{m}$  (13~24  $\mu\text{m}$ )  $\times$  16  $\mu\text{m}$  (12~19  $\mu\text{m}$ ); all had six hooks. The corresponding figures for the unfixed or fresh eggs were 35  $\mu\text{m}$  (28~51  $\mu\text{m}$ ), 29  $\mu\text{m}$  (24~43  $\mu\text{m}$ ), 2  $\mu\text{m}$  (1~3  $\mu\text{m}$ ), 27  $\mu\text{m}$  (20~35  $\mu\text{m}$ )  $\times$  22  $\mu\text{m}$  (18~28  $\mu\text{m}$ ) and 6 hooks, respectively. There were an average of 58,847 (31,540~89,300) eggs in a gravid proglottid. The length, width and diameters of the protoscolex, rostellum, and suckers of the cysticerci were 1.6 mm (0.4~3.4 mm), 1.5 mm (0.3~3 mm), 501  $\mu\text{m}$  (150~1,528  $\mu\text{m}$ ), 89  $\mu\text{m}$  (4~240  $\mu\text{m}$ ), and 192  $\mu\text{m}$  (90~380  $\mu\text{m}$ ), respectively. There were two rows of rudimentary hooklets on the scolex of the cysticerci. The inner hooklets averaged 16 (1~76) in number and 11  $\mu\text{m}$  (2~28  $\mu\text{m}$ ) in length. The outer hooklets were numerous and appeared as small dots. The surface of the

cysticerci had a tubercular appearance. These biological and morphological characteristics of Korean *Taenia* are similar to other *T. saginata*-like tapeworms in Asia, and have been designated as a new subspecies *T. saginata taiwanensis*.

**Key words:** morphology, *korean Taenia saginata taiwanensis*, Korea

# Hydrolysable Tannins Based On A Triterpenoid Glycoside Core, From *Castanopsis Hystrix*\*

Hsue-Fen Chen, Takashi Tanaka, Gen-Ichiro Nonaka,+ Toshihiro Fujioka † and Kunihide  
Mihashi †

Faculty of Pharmaceutical Sciences, Kyushu University 62, 3-1-1 Maidashi, Higashi-ku, Fukuoka 812, Japan; †  
Faculty of Pharmaceutical Sciences, Fukuoka University, 8-19-1 Nanakuma, Jonan-ku, Fukuoka 814-01, Japan

## ABSTRACT

In conjunction with a chemotaxonomic analysis of tannins in fagaceous plants, a new hydrolysable tannin (castanopsinin I) containing a triterpenoid glycoside core has been isolated from the leaves of *Castanopsis hystrix*, together with three structurally related hydrolysable tannins (castanopsinins A, C and E). The structure of castanopsinin I was established on the basis of chemical and spectral evidence to be 23-O-galloyl-3, 24-(S)-hexahydroxydiphenoyl-2 $\alpha$ , 3 $\beta$ , 23, 24-tetrahydroxyoleanane-(urs)-12-en-28-oic acid 28-O- $\beta$ -D-glucopyranoside. Castanopsinins may be used as chemotaxonomic markers in differentiating between *Castanopsis* and other species, such as *Quercus*, *Castanea* and *Pasania*.  
Key Word Index-*Castanopsis hystrix*; Fagaceae; hydrolysable tannins; castanopsinins; triterpenoid; hexahydroxydiphenic acid; gallic acid; tannin; chemotaxonomy.

## Phenylpropanoid-Substituted Catechins From *Castanopsis Hystrix* And Structure Revision Of Cinchonains\*

Hsue-Fen Chen, Takashi Tanaka, + Gen-Ichiro Nonaka, † Toshihiro Fujioka § and  
Kunihide Mihashi §

School of Pharmacy, Taipei Medical College, Taipei, Taiwan, R. O. C.; † Faculty of Pharmaceutical Sciences,  
Kyushu University 62, 3-1-1 Maidashi, Higashi-ku, Fukuoka 812, Japan; § Faculty of Pharmaceutical Sciences,  
Fukuoka University, 8-19-1 Nanakuma,

### ABSTRACT

Two new and two known complex flavan-3-ols, containing an additional phenylpropanoid (C<sub>6</sub>-C<sub>3</sub>) unit in the molecule, have been isolated from the leaves of *Castanopsis hystrix*. The structures including absolute stereochemistry were elucidated on the basis of spectroscopic evidence and also by synthesis. In addition, comparison of the CD spectral data of these compounds with those of previously known complex flavan-3-ols, cinchonains, has led to the revision of their structures.

## 「圖書館的新媒體：光碟」文獻提要選介

藍以樂

台北醫學院圖書館組員

### 摘 要

本文是以國內圖書館所採用的新媒體—光碟的有關文獻為主，選取近五年來發表的論文計四十餘篇，內容涵蓋光碟的各種相關問題，包括其發展、應用、選擇及評估、對圖書館的影響、光碟資料庫與線上資料庫比較，以及各種光碟資料庫之介紹等。

This article collected the literature concerning the library's new media-optical disk for the past five years (Jan. 1987-June 1991) in the R. O. C. It collected 43 articles describing all problems concerning optical disk, such as its development, application, selection and evaluation, the influence to the library, CD-ROM VS Online and the introduction of all kinds of CD-ROM database etc.

## Diffusion Characteristics Of Fibrin Films

Hsiu-O Ho and Chau-Yang Chen

*Graduate Institute of Pharmaceutical Sciences, Taipei Medical College, Taipei, Taiwan (Taiwan ROC)*

### ABSTRACT

Fibrin films prepared by enzymatic conversion of fibrinogen using thrombin were evaluated as a biodegradable and biocompatible carrier for drug delivery. Permeabilities, partition coefficients and diffusion coefficients were employed to characterize the diffusion of various solutes through fibrin film. For a series of alkyl parabens, Permeabilities decreased and partition coefficients into the films increased with increasing chain length of the alkyl group. On the other hand, there was no significant alteration of diffusion coefficients for propyl paraben permeating through fibrin films treated with glutaraldehyde for different intervals. However, Permeabilities of various macromolecules decreased as the time interval of crosslinking increased. A linear correlation between the logarithm of Permeability and the square of macromolecular radius was observed. Partition coefficients increased for all macromolecules examined with increasing extent of crosslinking as a result of introducing hydrophobic glutaraldehyde into fibrin film. Diffusion of macromolecules through free water regions within the films is a possible mechanism.

**Key words:** Fibrin film; diffusion; Alkyl paraben; Macromolecule; Permeability

## 家族性結節性硬化症 — 家族病例報告

賴史忠\* 洪英彥 翁林仲 柯佑民

\*彰化基督教醫院 眼科 台北市立陽明醫院 眼科

### ABSTRACT

本文報告家族性結節性硬化症，於兩代中發現三病例，患者及其家族成員均接受詳細家族史和病史調查，眼科一般例行檢查，視野檢查，眼底螢光攝影檢查等。全身系統檢查方面有理學檢查，血液學檢查，頭部電腦斷層掃描攝影，心臟超音波，腎臟超音波及皮膚切片病理檢查。結果發現在三病例中有視網膜星狀細胞缺陷瘤、皮脂腺瘤、皮膚脫色素斑、鰲魚皮狀斑、指甲纖維瘤、腎臟缺陷瘤、腦皮質結節性硬化、腦室旁鈣化結節等症狀，皆符合結節性硬化症的診斷。本文同時討論此病症之遺傳性、眼部特徵、診斷、治療及追蹤預後情形。

**Key words:** tuberous sclerosis, adenoma sebaceum, subependymal nodule, retinal astrocytic hamartoma.

## **Reversible Dilated Cardiomyopathy after Alcohol Withdrwal**

Nen-Chung Chang, Tze-Che Wang

*Department of Cardiology, Taipei Medical College Hospital*

### **ABSTRACT**

The diagnosis of alcoholic heart muscle disease was under the condition that, first, cavity dilatation and poor contraction of left ventricle, second, idiopathic and other specific heart muscle disease should be excluded, third, history of daily ethanol intake should be over 100-125 milliliter and more then 10 years, and fourth, so called "accordion heart sign". Decreased size of left ventriculer cavity and improved left ventricular function are noted after alcohol withdrwal, but deterioration after resumption of alcohol intake.

Two cases of alcoholic heart muscle disease are reported and the characteristic reversible feature should be recognized.



## 70 歲以上老年肥厚型心肌症之臨床特徵： 與 50 歲以上中青人之比較

張念中、王子哲

台北醫學院附設醫院心臟內科

肥厚型心肌症(HCM)多見於青、中年人，近年來超音波心圖檢查法(UCG)之普及，老年病例的報告增多。茲將吾等最近經驗的四病例報告如次：GNT: Gaint negative T wave

年齡 (性別)	主訴 (期間)	血壓	高血壓 病史	心電圖	超音波心圖			合併 疾病	家族 病史
					診斷	IVST/PWT	EF		
79 (男)	活動時喘，心悸 頭暈(2年)	110-120 60-70	+	LVH	HOCM	$\frac{22}{19}$	85%	胃淋巴瘤	-
74 (女)	活動時喘 (5年)	120-160 70-90	+	LVH GNT	HCM	$\frac{18}{16}$	78%	膀胱腫瘤	-
73 (男)	活動時喘，心悸 (4年)	170-180 90-110	+	LVH GNT	APH	$\frac{12}{11}$	80%	-	-
71 (男)	活動時喘 (3.5年)	120-130 70-80	+	LVH	HCM	$\frac{22}{16}$	82%	糖尿病	-

老年人 ECM 之發生機轉、臨床病態與予後疑點頗多。本報告老年例皆無家族病史，都伴有高血壓，且為輕度動搖型，UCG 為左心室同心性(CONCENTRIC)肥厚，少有非對稱性中隔肥厚(ASH)，頗多有心尖部肥厚(APH)。目前咸認為老年人 HCM 與高血壓有密切相關，但其病態與典型之高血壓性心臟病不同，因其左心室之異常肥厚形態與高血壓程度不成比例，而難單以高血壓解釋。乃推測先天已有心肌症之本質，受高血壓等使後負荷增大之後天因素之誘發，促使心肌病顯化為其可能之機轉。

結論：老年人 HCM 與青、中年不同，非早年發病之重症、末期例，而屬後天因素有關之晚發亞型。

## 持續性動靜脈血液濾過法成功的改善急性心肌梗塞合併肺水腫

張念中

台北醫學院附設醫院加護病房

### 摘 要

由於重症加護醫學之長足進步，肺水腫乃取代心律不整躍為急性心肌梗塞最常見之合併症。肺水腫之傳統治療以利尿、強心及血管擴張劑為主。近年來補助循環法(Intraaortic balloon pumping; IABP)之廣泛使用，使救命率提升，但罕見以持續性動靜脈血液濾過法(Continuous arteriovenous hemofiltration; CAVH)來治療肺水腫之報告。茲將吾等所經驗之一例報告如次：

病例 病例為 87 歲男性，無特殊過去病史。主訴胸悶而被送到本院求治。到急診室時意識昏迷，血壓無法測量，呼吸微弱，急救插管後送至加護病房。初入病房時血壓 60/? mmHg，心跳每分 90，無心雜音，肺部有明顯水泡聲。心電圖顯示第 II、III 及 aV<sub>F</sub> 誘導 ST 節段上升，胸部 X 光顯示心臟擴大及肺水腫。血液檢查之結果(住院當天)為 CPK 2150, LDH 895, GOT 450, GPT 70, BUN 30, Creatinine 2.9，動脈血氧分析呈現嚴重代謝性酸中毒。超音波心圖顯示廣泛之左心室下壁運動不良，心搏出率 35%。吾等診斷為急性下壁梗塞合併肺水腫，並開始以大量利尿劑，配合強心、血管擴張劑治療之。因住院當天尿量只有 200C.C.，BUN、Creatinine 有上升傾向，乃試伴用 CAVH。住院第二天病人意識清醒而予拔管，且胸部 X 光之肺水腫及動脈血氧分析呈明顯之改善。其後吾等以 CAVH 來維持每天的輸出入平衡，並以肺動脈導管來監視心血管動態，病人亦維持小康狀態。但家屬因經濟情況不佳而於第 12 天自動出院。

討論 肺水腫以利尿、強心及血管擴張劑為其傳統之治療手段。近年來並配以 IABP，此法機器昂貴，且須有心臟科專科人力之支援。CAVH 操作簡單，專業護理人員即可管理。CAVH 之優點在於緩慢除水，對心血管動態及血液滲透壓影響少，可使血管外液易於移入血管內，而少有血壓下降之不良後果。本法以除水為主，無直接強心效果，往往須配合強心劑及 IABP 之使用，方可完全改善肺水腫，但亦不失為緊急時值得嘗試併用之方法。

## **Diagnostic Value of The Pattern of Sinus Rhythm on Ambulatory Electrocardiographic Monitoring for Ventricular Arrhythmias in Patients with Old Myocardial Infarction.**

Nen-Chung Chang, M.D., F.C.C.P., Alexander T. WANG, M.D., Junn-Shon Wang, M.D.

*Department of Cardiology, Taipei Medical College Hospital, Taipei, Taiwan, Republic of China*

### **ABSTRACT**

We performed ambulatory electrocardiographic monitoring on 67 patients with old myocardial infarction in order to investigate the diagnostic value of the pattern of sinus rhythm for ventricular arrhythmias by focusing on the trend of the heart rate during sleep. The trend of the heart rate between 2 AM and 6 AM was analyzed and classified into two types, i.e., flat type with almost no variation in heart rate and spike type with a transient increase in heart rate. Among 67 subjects, the flat type was found in 38 and the spike type in 29.

Patients with the flat type showed very few ventricular arrhythmias, whereas 24 (83%) of 29 patients with the spike type showed serious ventricular arrhythmias ( $P < 0.01$ ). Furthermore, patients with severe coronary artery disease, left ventricular ejection fraction  $< 50\%$ , ventricular aneurysm or history of heart failure all showed the spike type.

These results suggest that the pattern of sinus rhythm during sleep is a clinically useful method in the management of patients with myocardial infarction in the post-hospital phase.

## Topographical Characteristics of Root Trunk Length Related to Guided Tissue Regeneration\*

Hsein-Kun Jackson Lu

*\*Periodontal Clinics, Taipei Medical College and National Taiwan University Hospital, Republic of China.*

### ABSTRACT

Thirty-seven molars with 94 furcations were selected for a topographical study of root trunks to clarify the possible factors which may affect the clinical application of guided tissue regeneration technique. A pre-determined plane was marked on the root trunk of each tooth 1 or 2 mm below the cemento-enamel junction (CEJ). The plane followed the presumed position of the occlusal border of the Teflon membrane. Cross sectioning of the root was then performed following the plane, and the width of the gap between the membrane and root surface was measured with the aid of a stereomicroscope. The results revealed, within the limited samples of this study, 94% of the furcations possessed variant depth of developmental concavities on the root trunks. These superficial irregularities at the entrances of furcations may prevent complete adaptation of the coronal microstructure of the Teflon membrane along their root surfaces. The width of the gaps between root surfaces and membranes ranged from 0.000 mm to 2.250 mm for all tooth samples. The study implied that the subgingival application of guided tissue membranes 1 to 2 below CEJ cannot ensure complete adaptation of furcation defects with their coronal microstructures in the majority of molars.

**Key Words:** Guided tissue regeneration; tooth root/anatomy and histology; furcation defects.

## Treatment of an Osseous Lesion Associated With a Severe Palato-Radicular Groove: A Case Report

Jiiang Huei Jeng, \*Hsein-Kun Jackson Lu, † and Lein Tuan Hou\*

*\*Department of Clinical Periodontics, National Taiwan University Hospital, Taipei, Taiwan, R.O.C.*

*\* Clinical Periodontics, Taipei Medical College.*

### ABSTRACT

This is a case report that describes the management of a severe periodontal defect associated with a palato-radicular (palato-gingival) groove affecting the maxillary right lateral incisor of a 50 year-old male. The patient presented with pain, gingival swelling, and a 10 mm periodontal pocket on the distopalatal aspect of the right maxillary lateral incisor. The defect was initially treated by scaling and root planing. Several days later a flap was elevated, the osseous defect was debrided, and odontoplasty was performed to eliminate the groove. The root surface was treated with citric acid for 3 minutes, the osseous defect was filled with non-porous hydroxyapatite, a periodontal membrane was placed, and the flap was readapted to the tooth. Postoperative care included systemic (minocycline) and local (chlorhexidine) antimicrobial therapy. The membrane was removed 6 weeks postoperatively and 14 months postoperatively the gingiva appeared healthy; radiographs suggested substantial resolution of the osseous defect and about 7 mm of probing attachment gain was recorded. Further studies are necessary to determine which of the several modes of therapy used to treat this lesion are necessary for success.

**Key Words:** Guided tissue regeneration; hydroxyapatite surgical flaps; palate surgery; gingiva/surgery.

## 因重度牙周炎拔除之白齒齒根叉部形態回溯分析

呂炫堃\* 許悅玲† 許嘉仁\*

\*台北醫學院牙醫學系

†台北醫學院附設醫院牙科

### 摘 要

本研究之目的乃欲由 45 顆因罹犯牙周炎而拔除之大白齒，回溯分析根叉解剖構造與牙周病治療可能之關係。本研究從 16 位罹犯重度牙周炎的病患之口內，拔除並收集上顎大白齒 23 顆，下顎大白齒 22 顆，經適當處理以後，以低速硬組織切片機，沿根叉開口處以下 2 毫米處做水平切割，並以立體顯微鏡放大 6.6 倍，測量大白齒牙根根叉內側凹陷之深度與根叉開口處二毫米以下之寬度。由本文之統計發現，因罹犯牙周炎而遭拔除之大白齒，其牙根根叉開口處寬度大於牙周刮匙可能之最小寬度 0.75 毫米者，佔 98%；牙根於根叉內側凹陷之統計值亦小於一般隨機取樣報告之結果。由此我們可以推論根叉局部之解剖構造，並非如以前所認為是導致大白齒根叉侵犯治療困難之主要原因；我們於臨床上應採取更積極的態度來治療根叉侵犯的問題。

Key words: periodontitis, furcation involvement, topography of furcation. 牙周炎：根叉侵犯，根叉解剖構造

## 重要護理行為的探討：比較護士與病人對重要護理行為的看法

盧美秀 林秋芬

台北醫學院 護理學系

### 摘 要

本研究係採用自行設計的「重要護理行為」之結構式問卷，探討護士和病人對重要護理行為的看法。本研究對象為衛生署評鑑合格的全國各級醫院，以隨機取樣，從北、中、南抽出公、私立醫學中心、區域醫院和地區醫院各一所，共 18 所，並以立意取樣法選取內外科、婦產科住院病人及服務於前述單位的白班護理人員，為調查對象。共發出問卷，護士 693 份，病人 839 份，有效回收率分別為 94.37% 和 93.56%。

研究結果如下：

一、護士和病人對護理行為重要性的看法上，不論在類別或項目上做比較，護士的平均值都比病人高。在全部 67 項護理行為中，護士和病人在看法上，只有 3 項有顯著的差異，若以類別做比較，也只有第 IV 類有顯著差異。此項結果表示，護士和病人間對護理行為重要性的看法上差異性不大，護士大多能提供令病人滿意的護理。

二、各級醫院之護士，對最重要的前三項護理行為的看法相同。醫學中心和區域醫院之護士，對前十項重要護理行為有相同的看法。在各級醫院的護士和病人對重要的前十項護理行為的看法中，醫學中心和區域醫院相當一致，地區醫院則略有差異。

三、護士的工作年資與其對第 I、III、VI 類護理行為重要性的看法有顯著差異。

四、病人的教育程度與其對第 V 類護理行為重要性的看法有顯著差異。

關鍵詞：護理行為，護士，病人。

## Programme of Therapeutic Donor Insemination (TDI) at Taipei Medical College Hospital-A Preliminary Report

Dhii-Ruey Tzeng, Feng-Chang Chen, Shew-Ru Chang, Wen-Chen Hsu,  
Li-Wei Chien, Ching-Wen Chang, An-Chiun Chen

*Department of Obstetrics and Gynecology, Taipei Medical College Hospital, Taipei, Taiwan, R.O.C.*

### ABSTRACT

Therapeutic donor insemination (TDI) has been advocated as a modality to treat azoospermic male factor infertility. Ovarian superovulation or intrauterine insemination (IUI) was reported to improve the cycle fecundity of patients receiving TAI. We investigated the efficacy of TAI by IUI in superovulated cycles at Taipei Medical College Hospital.

Twenty-seven infertile couples underwent in total 37 IUI cycles with donor semen after ovarian superovulation. The group consisted of 22 (81.5%) azoospermic couples; 2 (7.4%) oligospermic couples; 2 (7.4%) couples with genetic factor and 1 (3.7%) couple with ejaculatory dysfunction. Ovarian superovulation was achieved by a combination of clomiphene citrate (CC)/follicle-stimulating hormone (FSH)/human chorionic gonadotropin (hCG) or FSH/hCG (2 cycles). The timing of insemination was scheduled according to urinary luteinizing hormone (LH), serum estradiol (E2) level and transvaginal ultrasonography. The potential donors of semen were medical students from Taipei Medical College, and were screened for blood type, Rh factor and semen analysis; they were serologically negative for syphilis, *Chlamydia trachomatis*, HBsAg and HIV-III. Donor semen was prepared according to the swim-up method and only one insemination per cycle was performed. In maximum three treatment cycles were offered to each couple. Fresh semen utilized in 31 cycles and frozen semen in 6 cycles.

In total 14 pregnancies yielded a rate of pregnancy 51.9%. The mean cycle fecundity rate was 37.8% (14/37). The cumulative probability of pregnancy after three treatment cycles was 0.802. The rate of multiple pregnancies was 35.7% and consisted of five sets of twins. The rate of abortion was 14.3% and the remaining 12 pregnancies, including four sets of twins, are in progress. No conception occurred in cycles utilizing frozen semen, for a maximum level of E2 less than 500 pg/mL or for women aged more than 35 years. There was no case of ectopic pregnancy or severe ovarian hyperstimulation syndrome.

This preliminary work provides convincing evidence of the efficacy of IUI with donor semen combined with ovarian superovulation in the management of male factor infertility.

**Key words:** therapeutic donor insemination (TAI), azoospermia, intrauterine insemination (IUI)



## Transcriptional Activity of Long Terminal Repeat and Cellular Flanking Regions of Intracisternal A-Particle Gene 81

Chia Po Lin<sup>1,2</sup>, Jin Kun Li<sup>2</sup>, Chun-Mao Lin<sup>2,4</sup>, Chien-Chang Loa<sup>2,5</sup> and Felicia Y. -H. Wu<sup>3</sup>

<sup>1</sup>National Laboratories of Foods and Drugs, Department of Health, Executive Yuan Nankang, Taipei, R. O. C.

<sup>2</sup>Department of Microbiology, College of Science Soochow University Shih-Lin, Taipei, R. O. C.

<sup>3</sup>Cancer Research Group, Institute of Biomedical Sciences Academia sinica, Taipei, Taiwan, R. O. C.

<sup>4</sup>Present Address: Department of Biochemistry Taipei Medical College, Taipei, Taiwan, R. O. C.

<sup>5</sup>Present Address: Cell Biology and Immunology Division Development Center for Biotechnology, Taipei, Taiwan, R. O. C.

### ABSTRACT

The intracisternal A-type particles (IAPs) are defective endogenous retroviral-like entities encoded by a family of proviral elements in the mouse genome. Our earlier studies demonstrated that IAP gene 81 was bounded by long terminal repeat sequences at both 5' and 3' ends. Furthermore, the cellular flanking regions of IAP gene 81 contain 16 pairs of potential z-DNA forming dinucleotide tract and several tandemly repeating dinucleotide tracts. To elucidate the functional roles of these sequences in affecting the expression of DNA regions in which the IAP gene was inserted, various constructs were made in which long terminal repeat or the cellular flanking z-DNA regions of IAP gene 81 were linked to a bacterial reporter gene, chloramphenicol acetyltransferase (CAT) gene. They were then transfected into various cell lines such as , NIH 3T3, HeLa and nasopharyngeal carcinoma cells. Results obtained showed that the putative z-DNA element in either sense or antisense orientation led to a relatively low level of constitutive CAT expression in the three cell lines. On the other hand, in HeLa and NIH 3T3 cells, long terminal repeat element in sense orientation elicited relatively significant promoter activity in the transient assays. It is suggested that sequences flanking the IAP gene 81 body may not contribute to the high activity of IAP gene 81 expression. It is noteworthy that the z-DNA element present in the cellular flanking regions of IAP gene 81 may be the site preferred for the insertion.

Key words: Intracisternal A-particle, Long terminal repeat, z-DNA, Retrovirus, CAT assay

## Afferent and Efferent Connections of the Paramedian Reticular Nucleus in the Brain Stem of Cats

C. M. Pan, S. D. Wang, C. Y. Chang, H. T. Horng, A. M. Y. Lin and C. Y. Chai

*Institute of Biomedical Sciences, Academia Sinica, and Department of Biology and Anatomy, National Defense Medical Center, Taipei, Taiwan, Republic of China*

### ABSTRACT

Pan, C.M., S.D. Wang, C.Y. Chang, H.T. Horng, A.M.Y. Lin, and C.Y. Chai, Afferent and efferent connections of the paramedian reticular nucleus in the brain stem of cats. *Chinese J. Physiol.* 35(3): 181-196, 1992. Anatomical connections of the paramedian reticular nucleus (PRN) of the caudal medulla were investigated using a bi-directional tracer, horseradish peroxidase (HRP). The followings were observed when the tracer was microinjected to PRN: A. Both labelled neurons and terminals were found in the areas of the mesencephalic cardioinhibitory mechanism (CIM), the gigantocellular reticular nucleus (GRN), the ambiguous nucleus (AN) and the contralateral PRN. B. Only labelled terminals were demonstrated in the area of the nucleus of solitary tract (NTS) and the intermedial lateral cell column (IML) of the spinal cord. C. Only retrogradely labelled neurons were observed in the areas of the dorsal and dorsomedial medulla (DM) and ventrolateral medulla (VLM). A few labelled neurons were observed in the periaqueductal gray, the cuneiform nucleus and superior colliculus of the mesencephalon as well as the lamina spinal trigeminal nucleus.

When HRP was applied to the CIM, GRN or AN structures, respectively, both labelled cells and terminals were found in the PRN area. HRP injection in the VLM showed only labelled terminals in the PRN. However, injection of HRP to DM showed neither labelling neurons nor terminals in PRN.

Results suggest that PRN projects to the pressor area of DM/NTS and IML through which PRN could exert its inhibitory functions on the sympathetic pressor actions. In addition, PRN may suppress the vagal bradycardiac action through its reciprocal connections with CIM, GRN and AN. No lateralization in the PRN pathway was evident.

**Key Words:** paramedian reticular nucleus, HRP study, bidirectional tracing

## Purification and Characterization of Reversible Sperm Motility Inhibitors from Porcine Seminal Plasma

Hellen Jeng<sup>1,2</sup>, Keh-Min Liu<sup>\*1</sup> and Wen-Chang Chang<sup>\*3,4</sup>

<sup>1</sup>*Department of Anatomy, Kaohsiung Medical College, Kaohsiung, Taiwan, R. O. C.*

<sup>2</sup>*Department of Anatomy, Taipei Medical College, Taipei, Taiwan, R. O. C.*

<sup>3</sup>*Institute of Biochemical Sciences, National Taiwan University, Taipei, Taiwan, R. O. C.*

<sup>4</sup>*Institute of Biological Chemistry, Academia Sinica, P. O. Box 23-106, Taipei, Taiwan, R. O. C.*

### ABSTRACT

Two sperm motility inhibitors (SMI1 and SMI2) were purified from porcine seminal plasma with high performance liquid chromatography (HPLC). Their molecular weights are about 15,000 as estimated by SDS-polyacrylamide gel electrophoresis (SDS-PAGE). Both of them decreased the percentage of motile spermatozoa in a dose-dependent manner. The inhibitory effect can be abolished by addition of the porcine follicular fluid. Both SMI1 and SMI2 have similar amino acid composition, suggesting that they may be structurally related. They also have inhibitory effect on chymotrypsin.