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トピックス

MALDI TOF-MSを用いた新規腫瘍マーカーの検索

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愛媛医学 24(2):99-102, 2005

抗菌ペプチドによる皮膚の感染防御機構

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原 著

Anti-stress effects of medical ginseng (Korean red ginseng) in workers —Analysis of power spectral densities of heart rate and blood pressure—

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愛媛医学 24(2):108-113, 2005

要約

薬用人参(紅参;RGと略する)がストレスに対する拮抗作用を持っている事は既に知られている。著者は携帯血圧計(ABPM)を用いて日常作業中の血圧・心拍数を連続的に測定し、RGの循環器系に及ぼす影響を検討した。6人の志願者(すべて女性)に作業前にRG(正官庄コウジン末4.5g)を急性投与し、日常業務につかせる30分ごとに血圧・心拍数を測定した。その結果をフーリエ解析によってエネルギースペクトルに変換し、さらに周波帯域の自律神経パワースペクトル密度(PSD)として、プラセボ(PL)との比較を行った。その結果RGはPLに比べ、作業中の血圧・心拍数の増加を有意に抑制し、またPSDの分析から作業中のストレスを軽減していることが分かった。この結果は作業中の心・血管事故の一次予防に役立つものと考えた。

Key Words : Korean Red ginseng (RG), Autonomic nerve, Power spectral density (PSD)

経皮経食道胃管挿入術57症例の検討

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愛媛医学 24(2):114-119, 2005

Summary

Percutaneous trans-esophageal gastro-tubing (PTEG) is a new method of esophagostomy for gastrointestinal feeding and drainage developed by Ohishi in 1994. It is useful in patients who are unable to undergo percutaneous endoscopic gastrostomy (PEG). We studied the benefits and problems of PTEG. Our subjects were 57 patients undergoing PTEG using PTEG sets (Sumitomo Bakelite Co. Ltd, Japan) according to Ohishi's method. 7 cases of minor complications were seen during the PTEG operation, and 14 cases of postoperative complications, including accidental tube displacement, wound infection, and subcutaneous emphysema, were

seen afterwards. Only one severe postoperative complication occurred ; it was a case of respiratory failure due to increasing cervical subcutaneous emphysema post-PTEG. We surveyed 42 nurses as to which they felt was better, the PEG or PTEG method. Most felt PEG was better. Our data show that it is necessary to choose the more useful one of the two methods in each individual's case.

Key Words : PTEG, PEG, esophagostomy

前立腺癌に対する内分泌療法とHepatocyte growth factorの発現

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愛媛医学 24(2): 120-124, 2005

Summary

Hepatocyte growth factor (HGF) has been revealed to be a multifunctional cytokine which acts as a mitogen, motogen, and morphogen in normal and cancerous cells of various organs. The current study was carried out to evaluate the impact of endocrine therapy on HGF expression in prostate cancer patients. We performed serological analyses of HGF in 28 prostate cancer patients before and after endocrine therapy and an immunohistochemical analysis of HGF and its receptor, c-met, in 11 of the 28 patients. Serological analysis revealed no change in the serum level of HGF resulting from endocrine therapy. Immunohistochemical analysis demonstrated that HGF and c-met proteins were coexpressed in the cancer cells and that c-met protein was also expressed in the interstitial cells. Although we could not show a relationship between HGF expression and hormonal status, HGF is expected to correlate with the cancer development and differentiation via autocrine or paracrine fashions.

Key Words : Hepatocyte growth factor, prostate cancer, endocrine therapy

地域在住の高齢者における配偶者の有無と生命予後との関連についての研究

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愛媛医学 24(2): 125-135, 2005

Summary

The aim of this study is to clarify the association between the presence of a spouse and mortality by performing a follow-up survey on a population of community-dwelling elderly. Between 1996 and 1998 a baseline survey was performed on residents of the Ehime prefecture town of Shigenobu aged 60-84 years old. There were 4,545 possible respondents, of whom 3,600 (79.2%) replied. Of these, 464 persons were bedridden, being treated for stroke, myocardial infarction, cancer, or fracture, or followed-up for less than 365 days and were thus excluded, leaving a total of 3,106 subjects for the follow-up survey. 205 people died during the follow-up period. Average follow-up period was 1,638 days in males and 1,650 days in females.

From the Cox proportional hazards model analysis of survival, living with a spouse significantly reduced the risk of death (hazard ratio=0.458, 95%CI 0.224-0.940) in males aged 75-84 years old. In contrast, 75-84 year-old females living with a spouse had increased risk of death (hazard ratio=2.017, 95%CI 1.094-3.720).

It has been suggested that living with a spouse has opposite effects on mortality of elderly men and women. Further investigations are needed to clarify why these results were observed.

Key Words : Community-dwelling elderly, Mortality, Spouse

アクチン関連タンパクWDR1の機能解析

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愛媛医学 24(2): 136-148, 2005

Summary

The actin cytoskeleton plays a fundamental role in configuring cell shapes and movements. Actin interacting protein 1 (AIP1)/Tryptophan-aspartate-repeat protein 1 (WDR1) induces actin severing and disassembly when it combines with ADF/cofilin. We found that mitotic cell flattening occurred by the suppression of AIP1/WDR1. This was not due to any changes in phosphorylation and distribution of cofilin in the cells. We carried out a direct observation of actin filament severing/disassembly assay and found that phosphorylated ADF/cofilin still severs/disassembles actin filament and that AIP1/WDR1 effaces this in vitro. We propose that the phosphorylation of ADF/cofilin by itself will be insufficient to inhibit actin to turnover completely, and that AIP1/WDR1 rigorously will abort the severing/disassembly activity that is still carried out due to the phosphorylated ADF/cofilin. This mechanism is necessary to induce cell morphologic changes, especially mitotic cell rounding.

Key Words : AIP1/WDR1, ADF/cofilin, actin cytoskeleton, mitotic cell rounding

顔面神経麻痺後の病的共同運動と神経過誤支配 —モルモットを用いた神経圧迫障害の病態に関する基礎的研究—

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愛媛医学 24(2): 149-155, 2005

Summary

Facial synkinesis, which often occurs as a sequela of severe facial nerve palsy, was investigated in guinea pigs to elucidate the pathophysiology of this distressing condition. Using forceps, the facial nerve was clamped either at the extratemporal segment for 5 seconds (group A, n=6) or 10 minutes (group B, n=6), or at the intratemporal segment for 5 seconds (group C, n=6) or 10 minutes (group D, n=6). All of these procedures caused severe facial palsy. Fifteen weeks later, incidence of facial synkinesis was evaluated by observing the facial movement. In group A and B, none of the animals developed synkinesis. In contrast, 2 animals of group C (33%) and 6 animals of group D (100%) developed synkinesis. Doublelabel histological studies using two different fluorescent retrograde tracers showed that aberrant fluorescent staining was noted in some nerve cells of the facial nucleus in group D. These findings indicate that misdirection of the nerve fibers at the site of injury was the primary cause of facial synkinesis. It occurs exclusively in the intratemporal segment because of the lack of topographic innervation around this portion of the facial nerve.

Key Words : synkinesis, misdirection, fluorescent retrograde tracer

ラット腫瘍モデルに対する針状マグネシウムフェライト(MgFe₂O₄)を用いた誘導加熱による抗腫瘍効果

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愛媛大学医学部外科学第二

愛媛医学 24(2): 156-164, 2005

Summary

This study aimed to put into practical use tumor ablation therapy that employs induction heating into practical

use since it has been largely unavailable due to the difficulty in developing a heating apparatus for practical use ; another reason is that there is no heating substance that is biocompatible and that can handle hyperthermia conditions sufficiently. The application of induction heating to a MgFe₂O₄ needle, which was placed in a tumor, elevated the averaged temperature of the needle to 131.3±6.5°C in dry conditions. Histologically, necrotic areas were limited to about 3 mm, but apoptotic lesions were found at the periphery, and Hsp 70 was expressed at outside areas. A MgFe₂O₄ needle was placed in a rat subcutaneous tumor (average diameter, 17.6 mm) and induction heating was applied for 30 minutes. The temperature rose by an average of 12.3±1.8°C on the skin surface and an average of 9.6±5.7°C in the tumor, and a remarkable reduction in tumor size occurred in 6 of 7 rats (85.7%). The liver tumor size was also decreased in 5 of 6 rats (83.3%).

These results suggest that induction heating causes an antitumor effect by reducing the tumor size, which involves another effect other than the direct necrotizing effect. These results suggest that induction heating causes an antitumor effect by reducing the tumor size, which involves another effect other than the direct necrotizing effect.

Key Words : hyperthermia, ablation, needle-shaped metallic magnetic materials

大腿骨頭壊死に対する人工股関節置換術の問題点

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愛媛医学 24(2): 165-168, 2005

Summary

Objective. To investigate the causes of dislocations after total hip Arthroplasty (THA) for patients with idiopathic osteonecrosis of the femoral head (IONF).

Methods. Eight hips for 8 patients, 6 male and 2 female, with IONF that received THA were examined. The tension of soft tissues, bony impingement, and any discrepancies between lower extremities during the operation were all checked.

The femoral offset and the leg lengthening were checked using the device with the calipers pin system. Postoperatively, the X-ray examination was performed to check the position of the prosthesis.

Results. Dislocation caused by both bony impingement and soft tissue imbalance was observed in 5 of 8 cases at the trial reposition, while longer necks were adopted and the resection for the bony prominent had been done.

Conclusions. It is important to check for bony impingement and soft tissue imbalance during THA for the patients with IONF.

Key Words : Idiopathic osteonecrosis of femoral head, Total hip Arthroplasty, Dislocation

膀胱腫瘍および腎腫瘍におけるミトコンドリアDNA変異と酸化ストレス

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愛媛医学 24(2): 169-173, 2005

Summary

Several recent studies have demonstrated association of mitochondrial DNA (mtDNA) mutations with various human cancers. The origin of these mutations may be attributable to oxidative damage from reactive oxygen species (ROS). To examine the relationship between mtDNA mutations and ROS in human cancers, we examined urinary bladder and renal cancers for mutations in the displacement-loop (D-loop) region of mtDNA and

for 8-hydroxy-2'-deoxyguanosine (8-OHdG) content. The D-loop region of mtDNA of Japanese patients with urinary bladder or renal cancers was examined by direct sequencing. The level of 8-OHdG was measured in patients who underwent radical cystectomy or nephrectomy. Somatic mutations in the D-loop region were detected in 7 of 31 patients with bladder cancer (23%) and 3 of 21 patients with renal cancer (14%). The most frequent mutations were in the poly (C) mononucleotide repeat located at positions 303 to 309. The levels of 8-OHdG in cancerous tissues were significantly higher than in the neighboring non-cancerous tissues, but many of the cancers with an elevated 8-OHdG level did not display D-loop mutations. These results suggest that the D-loop region of mtDNA might have a genetic instability in cancer tissues independently of the 8-OHdG level.
Key Words : Mitochondrial DNA, D-loop, 8-hydroxy-2'-deoxyguanosine

臨床経験録

閉塞性動脈硬化症に対する下・動脈再建術の手術成績から見た血管新生治療の適応

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愛媛医学 24(2): 174-178, 2005

Summary

In 2000, the TransAtlantic Inter-Society Consensus (TASC) indicated that severely ischemic limbs of arteriosclerosis require early intervention by either surgery or catheter procedure among many therapeutic options for limb salvage. The surgical reconstructions of lower leg arteries, where catheter intervention is less effective, is the most important therapeutic option in this area. Recently, therapeutic angiogenesis (TA) has increased. We considered the inclusion criteria for TA from outcomes of surgical reconstructions of lower leg arteries (DB). We have performed DBs to 119 limbs, including 104 limbs of critical ischemia and 19 limbs requiring emergent operations since 1993. The results are as follows : The early success rate, secondary graft patency rate, and limb salvage rate for a critical limb ischemia was 86.5%, 77.5%, and 82.7%, respectively. The surgical success was limited by several factors : 1) limitation of the native artery ; 2) limitation of the auto vein graft ; 3) the timing of surgical intervention ; and 4) the patient's general condition. TA, which relieves ischemia after the growth of new vessels, is thought to be inappropriate in an urgent setting. In conclusion, 77.5% of critically ischemic limbs can be salvaged by conventional bypass procedure using vein graft and some part of remained 22.5% is expected to be salvaged by TA, especially in the cases of poor native artery and poor graft quality of stable ischemia.

Key Words : arteriosclerosis, surgical revascularization, therapeutic angiogenesis

症例報告

急性膵炎を合併した糖尿病性ケトアシドーシスの1例

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愛媛医学 24(2): 179-182, 2005

Summary

A 55-year-old man who had been treated for hypertension and hyperlipidemia was admitted unconscious to the hospital. He was diagnosed as having diabetic ketoacidosis (DKA) with concomitant hyperglycemia and metabolic ketoacidosis. His serum concentration of amylase was slightly elevated, but he reported no abdominal pain and abdominal computed tomography (CT) examination showed no evidence of pancreatitis.

A CT for high C-reactive protein performed during treatment revealed he had developed acute pancreatitis. We believe that the acute pancreatitis was caused by the diabetic ketoacidosis. We suggest that DKA may mask a coexisting acute pancreatitis, and that in cases of DKA a CT scan for high C-reactive protein should be performed to uncover this.

Key Words : ketoacidosis, acute pancreatitis, hyperlipidemia

緊急経皮的腎動脈形成術により透析導入を回避できた腎動脈硬化症の1例

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愛媛医学 24(2): 183-186, 2005

Summary

An 87-year-old man was admitted to Saiseikai Saijo Hospital because of heart failure associated with paroxysmal atrial fibrillation and severe hypertension. His heart failure was treated with Ca blockers and diuretics. However, the patient's urine volume gradually decreased and eventually progressed into anuria. Reno-vascular hypertension was suspected due to an abdominal bruit and the patient's high level of serum rennin, and the patients underwent emergent renal artery angiography. Abdominal angiograms showed an obstruction of the right renal artery and severe left renal artery stenosis (90%). Acute renal dysfunction improved after the emergent percutaneous renal artery angioplasty was performed. We experienced a case of unilateral atherosclerotic renal artery stenosis but avoided chronic hemodialysis by performing emergent percutaneous renal artery angioplasty.

Key Words : atherosclerotic renal artery stenosis, percutaneous transluminal renal angioplasty, chronic hemodialysis

僧帽弁形成術により睡眠呼吸障害が軽快した1例

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愛媛医学 24(2): 187-190, 2005

Summary

This report describes a patient with severe mixed-type sleep disordered breathing (SDB) and mitral regurgitation that was corrected by mitral valvuloplasty. A 59-year-old man who had experienced progressive dyspnea following exertion since December 2002 was admitted to our hospital in February 2003. A left ventriculograph demonstrated severe mitral regurgitation (Sellers III). The plasma level of brain natriuretic peptide (BNP) was 163.5 pg/ml. A polysomnograph revealed severe mixed-type SDB with an apnea-hypopnea index (AHI) of 36.6 episodes/hour. Mitral valvuloplasty was performed in April. His condition improved remarkably and the mitral regurgitation disappeared. He was readmitted for a sleep study in August. A polysomnograph showed only obstructive sleep apnea with an AHI of 14.1 episodes/hour and a total absence of central sleep apnea. His plasma of BNP decreased to 68.2 pg/ml.

Key Words : Sleep disordered breathing, Central sleep apnea, Heart failure

弓部大動脈瘤と大腸癌に対する経大動脈的ステントグラフトを用いた一期的手術の1例

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愛媛医学 24(2): 191-194, 2005

Summary

A 79-year-old man, diagnosed with advanced descending colon cancer, was found to have a giant saccular aneurysm of the aortic arch. A one-stage operation for both lesions was planned because the colon cancer progressed to a sub ileus state, and the aneurysm was large. Transaortic endovascular stent-grafting was performed on the aneurysm to decrease the surgical risk. The postoperative course was uneventful, and the aneurysm was thrombo-excluded successfully.

Key Words : thoracic aortic aneurysm, transaortic endovascular stent-grafting, colon cancer

左開胸によるoff-pump CABGと肺癌手術とを一期的に施行した1例

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愛媛大学医学部外科学第二

愛媛医学 24(2):195-198, 2005

Summary

Surgical strategy and procedure for the patient with concurrent coronary artery disease and lung cancer are controversial. We performed a single-stage operation on a 70-year-old man with a lesion in the left main trunk of his coronary artery and cancer in the lower left lobe of his lung through a left thoracotomy. This operation consisted of three steps : First, a left internal mammary artery was anastomosed to the left anterior descending artery. Second, a left lower lobectomy with lymphnode dissection was performed. Third, we anastomosed a free radial artery from the descending thoracic aorta to the left circumflex artery through a left thoracotomy.

We think this is a safe and efficient procedure for patients with left lung cancer and concurrent severe coronary artery disease.

Key Words : off-pump CABG, lung cancer, left thoracotomy

研究会抄録

第33回愛媛臨床血液懇話会

愛媛医学 24(2):199-201, 2005

第86回愛媛脳神経外科懇話会

愛媛医学 24(2):202-205, 2005

第6回愛媛肛門疾患懇話会

愛媛医学 24(2):206-208, 2005

第99回愛媛整形外科集談会

愛媛医学 24(2):209-212, 2005

第13回愛媛形成外科研修会

愛媛医学 24(2):213-214, 2005

第14回愛媛形成外科研修会

愛媛医学 24(2):215-216, 2005