

Cancer: Clinics Offering Alternative Therapies

Updated: 08/26/2004

ABSTRACTS

Immunological adjuvants and their modes of action.

Allison AC.

Arch Immunol Ther Exp (Warsz). 1997; 45(2-3):141-7.

New adjuvant formulations contain a vehicle, which carries antigens to antigen-presenting cells. Examples of vehicles are liposomes, immune-stimulating complexes and microfluidized squalene-in-water emulsions. Adjuvant formulations may contain immunomodulators, which augment cytokine production, such as a synthetic muramyl dipeptide analog or monophosphoryl lipid A. In a primary cascade of cytokine production at the site of antigen + adjuvant injection, TNF-alpha promotes the migration of dendritic cells (DC) to lymphoid tissues while GM-CSF accelerates the differentiation of DC into efficient presenters of antigens to T cells. Adjuvants also up-regulate a secondary cascade of cytokines in lymphoid tissues responding to antigenic stimulation: IL-12 augments the production of IFN-gamma, which favors the production of antibodies of protective isotypes (IgG2a in the mouse). Thus adjuvants can regulate immune responses qualitatively as well as quantitatively. Adjuvant formulations can also activate complement, generating C3d, which binds CD21 on follicular dendritic cells (FDC) and B cells. FDC targeting favors the generation of B lymphocyte memory, which is important for vaccination

Fifth International Symposium on Functional Medicine.

Bland JBS.

1998;1998 Feb; 18(2)

Role of transforming growth factor B in human disease.

Blobe G.

N Engl J Med. 2000; 342(18):1350-8.

In situ thermal ablation of focal liver neoplasms, with a special emphasis on the intraoperative ultrasound-guided radio frequency ablation method.

Branda H, Vlad L, Sparchez Z, et al.

Rom J Gastroenterol. 2003 Mar; 12(1):57-64.

In the last two decades an important number of image-guided procedures have been developed in order to treat focal liver tumors through ablation in a similar way with the surgical procedure, which is still considered as the curative method for patients with resectable hepatic tumours. Unfortunately this criteria does not apply to all patients and in those cases (nonsurgical patients), the techniques are becoming frequently used as standard independent or adjuvant therapies. Tumour ablation using thermal procedures is now considered as one of the most promising among these alternative ablation therapies. It is the goal of these techniques together with the continuous improvement in technology and increasing clinical experience, to become the treatment of choice for limited liver tumours, challenging surgical resection

The therapeutic potential of Aloe Vera in tumor-bearing rats.

Corsi MM, Bertelli AA, Gaja G, et al.

Int J Tissue React. 1998; 20(4):115-8.

Aloe Vera has been claimed to contain several important therapeutic properties, including anticancer effects. The effect of Aloe Vera administration was studied on a pleural tumor in rat. Growth of Yoshida AH-130 ascite hepatoma cells injected (2×10^5) in 0.1 ml) into pleura of male inbred Fisher rats was evaluated at different times (7th and 14th days). Data show that the use of Aloe Vera proved a therapeutic method, and that the present experimental model could be useful in the study of other therapeutics treatments in vivo

Role of pro-and anti-inflammatory cytokines during inflammation: experimental and clinical findings.

Dinarelo CA.

J Biol Regul Homeost Agents. 1997; 11 (3):91-103.

Tumor ablation with radio-frequency energy.

Gazelle GS, Goldberg SN, Solbiati L, et al.

Radiology. 2000 Dec; 217(3):633-46.

Tumor ablation by using radio-frequency energy has begun to receive increased attention as an effective minimally invasive approach for the treatment of patients with a variety of primary and secondary malignant neoplasms. To date, these techniques have been used to treat tumors located in the brain, musculoskeletal system, thyroid and parathyroid glands, pancreas, kidney, lung, and breast; however, liver tumor ablation has received the greatest attention and has been the subject of a large number of published reports. In this article, the authors review the technical developments and early laboratory results obtained with radio-frequency ablation techniques, describe some of the early clinical applications of these techniques, and conclude with a discussion of challenges and opportunities for the future

Radio-frequency ablation of renal cell carcinoma: early clinical experience.

Gervais DA, McGovern FJ, Wood BJ, et al.

Radiology. 2000 Dec; 217(3):665-72.

PURPOSE: To report the authors' early experience with radio-frequency (RF) ablation of renal cell carcinoma. **MATERIALS AND METHODS:** Twenty-four percutaneous RF ablation treatments for nine tumors were performed in eight patients with renal cell carcinoma. Indications included coexistent morbidity, previous surgery, or solitary kidney in patients with a life expectancy shorter than 10 years. Smaller (3 cm) and/or central lesions ($n = 6$) were treated with cluster or multiple electrodes. Patients returned for a second treatment when follow-up imaging depicted tumor enhancement. Follow-up imaging was performed at 1 and 3 months and then at 6-month intervals, with a mean follow-up of 10.3 months. Seven patients were alive at least 6 months after their initial treatment. **RESULTS:** All five exophytic tumors were free of enhancement. One of three central tumors was free of enhancement. One tumor had both central and exophytic components and was free of enhancement. Three tumors were 3 cm or smaller and free of enhancement. Of the six tumors larger than 3 cm, four were free of enhancement. **CONCLUSION:** Percutaneous RF ablation is a promising treatment for select patients with renal cell carcinoma. The ultimate role of this modality will continue to evolve and warrants further study

Proteolytic enzymes in proliferation and neoplastic metastases formation.

Golaszewski Z, Gacko M, Chyczewska E, et al.

Rocz Akad Med Bialymst. 1997; 42 Suppl 1:48-59.

Metalloproteases, plasminogen urokinase activator, plasmin and cathepsins enable the expansion of neoplastic tumors, leading to metastases formation. They cause neoplastic cells to detach from tumor, facilitate cell movement, implantation and participate in tumor vascularization. The regulation of these processes is accomplished during the synthesis and activation of proenzymes. Enzyme activity control is realized by their bonds with cellular membranes, and inhibitor action

Evaluation of pancreatic proteolytic enzyme treatment of adenocarcinoma of the pancreas, with nutrition and detoxification support.

Gonzalez NJ, Isaacs LL.

Nutr Cancer. 1999; 33(2):117-24.

Historically, large doses of proteolytic enzymes, along with diet, nutritional supplements, and "detoxification" procedures, have been used in alternative therapies to treat all forms of cancer, without formal clinical studies to support their use. A 2-year, unblinded, 1-treatment arm, 10-patient, pilot prospective case study was used to assess survival in patients suffering inoperable stage II-IV pancreatic adenocarcinoma treated with large doses of orally ingested pancreatic enzymes, nutritional supplements, "detoxification" procedures, and an organic diet. From January 1993 to April 1996 in the authors' private practice, 10 patients with inoperable, biopsy-proven pancreatic adenocarcinoma were entered into the trial. After one patient dropped out, an 11th patient was added to the study (however, all 11 are considered in the data tabulation). Patients followed the treatment at home, under the supervision of the authors. As of 12 January 1999, of 11 patients entered into the study, 9 (81%) survived one year, 5 (45%) survived two years, and at this time, 4 have survived three years. Two patients are alive and doing well: one at three years and the other at four years. These results are far above the 25% survival at one year and 10% survival at two years for all stages of pancreatic adenocarcinoma reported in the National Cancer Data Base from 1995. This pilot study suggests that an aggressive nutritional therapy with large doses of pancreatic enzymes led to significantly increased survival over what would normally be expected for patients with inoperable pancreatic adenocarcinoma

[Antimetastatic properties of aloe juice].

Gribel' NV, Pashinskii VG.

Vopr Onkol. 1986; 32(12):38-40.

An evaluation of antimetastatic properties of succus Aloes was carried out using three types of experimental tumors of mice and rats. It was found that succus Aloes treatment contributes to reduction of tumor mass, metastatic foci and metastasis frequency at different stages of tumor progress without affecting major tumor growth. Succus Aloes potentiates the antitumor effect of 5-fluorouracil and cyclophosphamide as components of combination chemotherapy

Efficacy of acemannan in treatment of canine and feline spontaneous neoplasms.

Harris C, Pierce K, King G, et al.

Mol Biother. 1991 Dec; 3(4):207-13.

Forty-three dogs and cats with spontaneous tumors were treated with the immunostimulating polysaccharide acemannan by intraperitoneal and intralesional routes of administration. Tumors from 26 of these animals showed histopathological evidence of immunological attack as shown by marked necrosis or lymphocytic infiltration. Thirteen showed moderate to marked tumor necrosis or liquefaction. Twenty-one demonstrated lymphoid infiltration, and seven demonstrated encapsulation. Twelve animals showed obvious clinical improvement as assessed by tumor shrinkage, tumor necrosis, or prolonged survival; these included five of seven animals with fibrosarcomas. It is believed that acemannan exerts its antitumor activity through macrophage activation and the release of tumor necrosis factor, interleukin-1, and interferon

Radiofrequency Energy Cooks, Kills Cancerous Tumors.

Healthlink.

2000

Evaluation of antioxidant potential of aloe vera (*Aloe barbadensis miller*) extracts.

Hu Y, Xu J, Hu Q.

J Agric Food Chem. 2003 Dec 17; 51(26):7788-91.

The polysaccharide and flavonoid concentrations of two-, three-, and four-year-old Aloe vera were determined, and their antioxidant activities were evaluated compared to BHT and alpha-tocopherol by the DPPH radical scavenging method and the linoleic acid system at 100 microg of soluble solids per mL of ethanol. The results showed that three-year-old Aloe vera contained significantly higher levels of polysaccharides and flavonoids than two- and four-year-old Aloe vera, and no significant differences in flavonoid levels were found between three- and four-year-old Aloe vera. All the aloe extracts showed significant antioxidant activity. The antioxidant activity of Aloe vera extracts and reference compounds followed the order: three-year-old Aloe vera > BHT > four-year-old Aloe vera > alpha-tocopherol > two-year-old Aloe vera. The three-year-old extract exhibited the strongest radical scavenging activity of 72.19%, which is significantly higher than that of BHT at 70.52% and alpha-tocopherol at

65.20%. These data suggest that the growth stage plays a vital role in the composition and antioxidant activity of Aloe vera

The influence of long-term Aloe vera ingestion on age-related disease in male Fischer 344 rats.

Ikeno Y, Hubbard GB, Lee S, et al.

Phytother Res. 2002 Dec; 16(8):712-8.

The effects of long-term Aloe vera ingestion on age-related diseases were investigated using male specific pathogen-free (SPF) Fischer 344 rats. Experimental animals were divided into four groups: Group A, the control rats fed a semi-synthetic diet without Aloe vera; Group B, rats fed a diet containing 1% freeze-dried Aloe vera file; Group C, rats fed a diet containing 1% charcoal-processed, freeze-dried Aloe vera file; and Group D, rats fed the control diet and given whole leaf charcoal-processed Aloe vera (0.02%) in the drinking water. This study demonstrates that life-long Aloe vera ingestion produced neither harmful effects nor deleterious changes. In addition, Aloe vera ingestion appeared to be associated with some beneficial effects on age-related diseases. Groups B exhibited significantly less occurrence of multiple causes of death, and a slightly lower incidence of fatal chronic nephropathy compared with Group A rats. Groups B and C rats showed the trend, slightly lower incidences of thrombosis in the cardiac atrium than Group A rats. Therefore, these findings suggest that life-long Aloe vera ingestion does not cause any obvious harmful and deleterious side effects, and could also be beneficial for the prevention of age-related pathology

Aloe vera.

Klein AD, Penneys NS.

J Am Acad Dermatol. 1988 Apr; 18(4 Pt 1):714-20.

We review the scientific literature regarding the aloe vera plant and its products. Aloe vera is known to contain several pharmacologically active ingredients, including a carboxypeptidase that inactivates bradykinin in vitro, salicylates, and a substance(s) that inhibits thromboxane formation in vivo. Scientific studies exist that support an antibacterial and antifungal effect for substance(s) in aloe vera. Studies and case reports provide support for the use of aloe vera in the treatment of radiation ulcers and stasis ulcers in man and burn and frostbite injuries in animals. The evidence for a potential beneficial effect associated with the use of aloe vera is sufficient to warrant the design and implementation of well-controlled clinical trials

[The role of proteolytic enzymes in skin neoplasm progression and development of metastasis].

Kozlowski L, Wojtukiewicz MZ.

Postepy Hig Med Dosw. 1999; 53(6):841-54.

Proteases are reported to play an essential role in the proliferative, invasive, and metastatic potential of malignant tumor cells. Metastasis is characterized by a complex series of interactions between tumor cells and their environment. Tumor expansion and invasion are associated with the destruction of normal tissues around the tumor by a variety of classes of tumor and host-derived extracellular matrix-degrading proteinases. Increased levels of the major lysosomal proteinases cathepsin B, D, L, metalloproteinases and plasminogen activators, are correlated with tumor cell invasion and metastasis in human melanoma and other skin tumors, breast and colorectal cancer

Late Breaking News: Twelve angry jurors DrBlvscraft.

Life Extension Magazine. 1997;1997 Oct

[Proteolytic enzymes in human lymphocytic leukemia cells. I. Activity of dipeptidylaminopeptidase IV, plasminogen activator and cathepsins B and L in cells with different immunologic phenotype].

Lokshina LA, Bylinkina VS, Samoilova RS, et al.

Biokhimiia. 1993 Jul; 58(7):1104-15.

Immunological and biochemical study of lymphoid cells obtained from 20 patients with various forms of lymphoproliferative disorders has been carried out. It was found that different phenotypes of lymphoid cells at various stages of differentiation have different activity levels of dipeptidyl aminopeptidase IV (DAP IV), plasminogen activator (urokinase type) and cathepsins B + L. The highest proteinase activity values were found in the lysates of just those leukemic T-cells whose phenotypes corresponded to the initial stages of thymic differentiation or to activated T-cells. The 10 times lowered activity was found in the cell

phenotypes of mature T-helpers and T-suppressors, and the activity of the both was at virtually the same level. In lymphoid cells of the B-lineage (from pre-B to mature B-lymphocytes) the proteinase activities did not differ essentially: they were 2 to 3 times lower than in the lymphoid progenitors. It was suggested that the regulated activity changes in some proteinases occur during differentiation along the T- or B-pathways. It is likely that the increases in DAP IV and cathepsins B + L activities are associated with the activation of mature lymphoid T- and B-cells. No direct correlation was found between the activity of either proteinase and the expression of any of the surface markers under study

Bromelain: biochemistry, pharmacology and medical use.

Maurer HR.

Cell Mol Life Sci. 2001 Aug; 58(9):1234-45.

Bromelain is a crude extract from the pineapple that contains, among other components, various closely related proteinases, demonstrating, in vitro and in vivo, antiedematous, antiinflammatory, antithrombotic and fibrinolytic activities. The active factors involved are biochemically characterized only in part. Due to its efficacy after oral administration, its safety and lack of undesired side effects, bromelain has earned growing acceptance and compliance among patients as a phytotherapeutic drug. A wide range of therapeutic benefits has been claimed for bromelain, such as reversible inhibition of platelet aggregation, angina pectoris, bronchitis, sinusitis, surgical traumas, thrombophlebitis, pyelonephritis and enhanced absorption of drugs, particularly of antibiotics. Biochemical experiments indicate that these pharmacological properties depend on the proteolytic activity only partly, suggesting the presence of nonprotein factors in bromelain. Recent results from preclinical and pharmacological studies recommend bromelain as an orally given drug for complementary tumor therapy: bromelain acts as an immunomodulator by raising the impaired immunocytotoxicity of monocytes against tumor cells from patients and by inducing the production of distinct cytokines such as tumor necrosis factor- α , interleukin (IL)-1 β , IL-6, and IL-8. In a recent clinical study with mammary tumor patients, these findings could be partially confirmed. Especially promising are reports on animal experiments claiming an antimetastatic efficacy and inhibition of metastasis-associated platelet aggregation as well as inhibition of growth and invasiveness of tumor cells. Apparently, the antiinvasive activity does not depend on the proteolytic activity. This is also true for bromelain effects on the modulation of immune functions, its potential to eliminate burn debris and to accelerate wound healing. Whether bromelain will gain wide acceptance as a drug that inhibits platelet aggregation, is antimetastatic and facilitates skin debridement, among other indications, will be determined by further clinical trials. The claim that bromelain cannot be effective after oral administration is definitely refuted at this time

Cooking Cancer Tumors to Death.

McCullough M.

2001;2001 Oct 22

Effects of a high molecular mass *Convolvulus arvensis* extract on tumor growth and angiogenesis.

Meng XL, Riordan NH, Casciari JJ, et al.

P R Health Sci J. 2002 Dec; 21(4):323-8.

BACKGROUND: Plant materials represent promising sources of anti-cancer agents. We developed and tested a novel extract from the ubiquitous plant *Convolvulus arvensis*. **MATERIALS AND METHODS:** *Convolvulus arvensis* components were extracted in boiling water, and small molecules were removed by high-pressure filtration. The extract's biological activity was assessed by measuring its effects on S-180 fibrosarcoma growth in Kun Ming mice and on heparin-induced angiogenesis in chick embryos. We also examined the extract's effects on lymphocytes ex vivo and tumor cell growth in vitro. **RESULTS:** The extract (primarily proteins and polysaccharides) inhibited tumor growth in a dose-dependent fashion when administered orally. At the highest dose tested, 200 mg/kg/day, tumor growth was inhibited by roughly seventy percent. Subcutaneous or intraperitoneal administration at 50 mg/kg/day also inhibited tumor growth by over seventy percent. The extract's acute LD50 in Kun Ming mice was 500 mg/kg/day when injected, indicating that tumor growth inhibition occurred at non-toxic doses. It inhibited angiogenesis in chick embryos, improved lymphocyte survival ex vivo, and enhanced yeast phagocytosis, but did not kill tumor cells in culture. **CONCLUSION:** High molecular mass extract deserves further study as an anti-cancer agent

Prevention of angiogenesis by naked DNA IL-12 gene transfer: angioprevention by immunogene therapy.

Morini M, Albini A, Lorusso G, et al.

Gene Ther. 2004 Feb; 11(3):284-91.

IL-12 is thought to induce a cytokine cascade with antiangiogenic effects mediated by IFN-gamma and angiostatic CXCR3 chemokine ligands. Naked DNA intramuscular injection of an expression vector plasmid producing IL-12 resulted in significant, well-tolerated elevation of serum IL-12 levels. Injection of the IL-12 plasmid at least 2 days, and up to 20 days, before subcutaneous injection of matrigel with angiogenic factors resulted in strong prevention of angiogenesis in both C57/bl and nude mice. A single injection of the IL-12 plasmid contemporarily with the matrigel or 2 days after resulted in partial, statistically not significant, inhibition. Control plasmid injection did not affect either angiogenesis or angiogenesis inhibition by IL-12 protein in vivo. Angiogenesis inhibition was observed in NK cell-depleted C57/bl and nude mice as well as in IFN-gamma(-/-) and CXCR3(-/-) knockout mice, indicating that NK- and/or T-cell-initiated IFN-gamma-chemokine cascades were not involved in the angiogenesis inhibition observed in vivo. Finally, IL-12 plasmid DNA gene transfer significantly prevented the growth and vascularization of highly angiogenic KS-Imm Kaposi's sarcoma and TS/A murine mammary carcinoma tumors in nude and/or syngeneic mice. These data suggest that a preventive gene therapy approach using antiangiogenic cytokines can effectively inhibit tumor angiogenesis and KS, representing an example of angioimmunoprevention. *Gene Therapy* (2004) 11, 284-291. doi:10.1038/sj.gt.3302175

Late Breaking News: Twelve angry jurors, Dr. Burzynski's latest victory signals citizen revulsion at federal tactics.

Mouscher D.

Life Extension Magazine 1997 Oct. 1997;Oct 1997

[Effect of chemotherapy combined with the use of tissue preparations on nonspecific immunity in patients with pulmonary tuberculosis].

Nersesian ON, Bogatyreva EV.

Probl Tuberk. 1990;(1):28-31.

General and local nonspecific immunity was studied in 143 new cases of pulmonary tuberculosis (71 and 72 persons, respectively). The results showed that combination of chemotherapy using desensitizing agents and tissue preparations according to V. P. Filatov (a suspension of placenta tissue and aloe) had an immunomodulating effect. The efficacy of the combined chemotherapy amounted to 87 per cent with an account of the general immunity status

Austrian Researchers Find that Enzymes Restrict Out-of-Control Growth Factor Tied to Women's Breast Cancer.

NewsEdge.

NewsEdge. 2000

Development of HER2-specific humanized antibody Herceptin (trastuzumab).

Nihira S.

Nippon Yakurigaku Zasshi. 2003 Dec; 122(6):504-14.

HER2 is a member of the human epidermal growth factor receptor family, possessing protein kinase activity in its cytoplasmic domain. There were evidences indicating that (1) amplification of HER2/neu gene and HER2 protein over-expression in tumor cells was observed in 25-30% of human breast cancer and (2) amplification of HER2/neu correlated with poor prognosis, including shorter disease-free and overall survival. These evidences suggested HER2 was a promising candidate for novel molecular targets of breast cancer therapy. Herceptin is a recombinant humanized monoclonal antibody generated by Genentech, Inc. for the treatment of HER2 over-expressed/HER2 gene amplified metastatic breast cancer (MBC). Preclinical studies demonstrated that the antibody had anti-tumor activity in vivo and in vitro, and additive or synergistic enhancement of anti-tumor activity of the antibody was observed in combination with various anti-tumor agents in mouse models. In clinical studies, apparent extension of overall survival was observed in HER2 overexpressing MBC patients. Herceptin is the first anticancer drug whose use as a treatment for MBC patients is decided based on the status of the HER2 gene amplification/HER2 protein over-expression. The development and standardization of HER2 test were a key strategy in clinical development of this drug, since appropriate selection of patients with HER2 over-expression was the essential point for success

Effects of muramyl peptides on macrophages, monokines, and sleep.

Pabst MJ, Beranova-Giorgianni S, Krueger JM.

Neuroimmunomodulation. 1999 Jul; 6(4):261-83.

Muramyl peptides are fragments of peptidoglycan from the cell walls of bacteria. Because of their unique chemistry, the immune system recognizes that muramyl peptides are products of bacteria, and it responds by becoming activated to resist infection. This resistance to infection is nonspecific, and extends to unrelated species of bacteria, fungi, and viruses. A key mechanism of the resistance to infection is activation of macrophages. Macrophage activation results in increased production of microbicidal oxygen radicals like superoxide and peroxide, and in increased secretion of inflammatory cytokines like interleukin-1beta and tumor necrosis factor-alpha. These cytokines, besides activating neutrophils, B lymphocytes, and T lymphocytes, act on the central nervous system to induce physiological responses like fever and sleep. These physiological responses also aid in combating infection. Muramyl peptides also activate macrophages and other cells of the immune system to kill cancer cells. Muramyl peptides and similar agents will become more important as therapeutic agents in the future, due to increasing resistance of microbes to antibiotics, and increasing numbers of patients with immunodeficiencies

. RSNA: radiofrequency ablation effective for breast cancer liver metastases. DG (Doctor's Guide) Dispatch.

Pullen L.

1999;1999 Dec 1

No grip, no growth: the conceptual basis of excessive proteolysis in the treatment of cancer.

Reijerkerk A, Voest EE, Gebbink MF.

Eur J Cancer. 2000 Aug; 36(13 Spec No):1695-705.

The formation of new bloodvessels, called angiogenesis, is critical for a tumour to grow beyond a few mm(3) in size. A provisional matrix promotes endothelial cell adhesion, migration, proliferation and survival. Synthesis and degradation of this matrix closely resemble processes that occur during coagulation and fibrinolysis. Degradation of the matrix and fibrinolysis are tightly controlled and balanced by stimulators and inhibitors of the plasminogen activation system. Here we give an overview of these processes during tumour progression. We postulate a novel way to inhibit angiogenesis by removal of the matrix through specific and localised overstimulation of the plasminogen activation system

Aloe vera leaf gel: a review update.

Reynolds T, Dweck AC.

J Ethnopharmacol. 1999 Dec 15; 68(1-3):3-37.

Research since the 1986 review has largely upheld the therapeutic claims made in the earlier papers and indeed extended them into other areas. Treatment of inflammation is still the key effect for most types of healing but it is now realized that this is a complex process and that many of its constituent processes may be addressed in different ways by different gel components. A common theme running through much recent research is the immunomodulatory properties of the gel polysaccharides, especially the acetylated mannans from Aloe vera, which are now a proprietary substance covered by many patents. There have also been, however, persistent reports of active glycoprotein fractions from both Aloe vera and Aloe arborescens. There are also cautionary investigations warning of possible allergic effects on some patients. Reports also describe antidiabetic, anticancer and antibiotic activities, so we may expect to see a widening use of aloe gel. Several reputable suppliers produce a stabilized aloe gel for use as itself or in formulations and there may be moves towards isolating and eventually providing verified active ingredients in dosable quantities

Toxicity of field bindweed (*Convolvulus arvensis*) to mice.

Schultheiss PC, Knight AP, Traub-Dargatz JL, et al.

Vet Hum Toxicol. 1995 Oct; 37(5):452-4.

The effects of feeding high and low doses of field bindweed (*Convolvulus arvensis*) to mice were investigated. Bindweed contains several alkaloids, including pseudotropine, and lesser amounts of tropine, tropinone, and meso-cuscohygrine. Mice fed bindweed exclusively died or were euthanized after 4-7 d and had severe hepatic necrosis and gastritis with ulceration or erosions. Mice fed low doses of bindweed along with standard laboratory mouse diet for 6 or 8 w had no clinical disease or gross lesions on necropsy examination but did have histologic lesions of mild multifocal hepatitis and gastritis

The in vitro immunomodulatory effects of glyconutrients on peripheral blood mononuclear cells of patients with chronic fatigue syndrome.

See DM, Cimoch P, Chou S, et al.

Integr Physiol Behav Sci. 1998 Jul; 33(3):280-7.

In humans, eight monosaccharides are required for the synthesis of glycoproteins. Dietary supplements that supply these crucial sugars are known as glyconutrients. A glyconutrient compound was added to Peripheral Blood Mononuclear Cells (PBMC) isolated from normal controls and patients with the Chronic Fatigue Syndrome (CFS), a disease associated with immune dysregulation. The in vitro immunomodulatory effects were investigated. Cell surface expression of the glycoproteins CD5, CD8, and CD11a were significantly lower in patients with CFS compared to normal controls. Addition of glyconutrient homogenate to PBMC from patients with CFS stimulated with phytohemagglutinin significantly increased the expression of each glycoprotein. Furthermore, natural killer (NK) cell function was reduced in CFS patients. The glyconutrient preparation significantly enhanced NK cell activity versus human herpes virus 6 (HHV-6)-infected H9 cells in an 8 h ⁵¹Cr release assay compared to placebo for PBMC from patients with CFS ($p < .01$). Finally, apoptosis was significantly higher in patients with CFS. The percentage of apoptotic cells was significantly decreased in PBMC from patients with CFS that had been incubated for 48 h with glyconutrients. Thus, glyconutrients improved abnormal immune parameters in vitro in patients with CFS

RFA: Lung Cancer Patients in China 2000 Mar 3.

Sewell P.

Jackson, MS: University of Mississippi Medical Center. 2000;2000 Mar 3.

Studies of the effect of acemannan on retrovirus infections: clinical stabilization of feline leukemia virus-infected cats.

Sheets MA, Unger BA, Giggelman GF, Jr., et al.

Mol Biother. 1991 Mar; 3(1):41-5.

Feline leukemia is a disease induced by an oncornavirus infection that inevitably causes clinically affected cats to die. It has been estimated that 40% of cats are dead within 4 weeks and 70% within 8 weeks of the onset of clinical symptoms. Acemannan is a complex carbohydrate with both immunostimulatory and direct antiviral properties. Administration of acemannan for 6 weeks intraperitoneally to clinically symptomatic cats significantly improved both the quality of life and the survival rate. Twelve weeks after initiation of treatment, 71% of treated cats were alive and in good health

IL-12 inhibition of endothelial cell functions and angiogenesis depends on lymphocyte-endothelial cell cross-talk.

Strasly M, Cavallo F, Geuna M, et al.

J Immunol. 2001 Mar 15; 166(6):3890-9.

In vivo IL-12-dependent tumor inhibition rests on the ability of IL-12 to activate a CD8-mediated cytotoxicity, inhibit angiogenesis, and cause vascular injury. Although in vivo studies have shown that such inhibition stems from complex interactions of immune cells and the production of IFN-gamma and other downstream angiostatic chemokines, the mechanisms involved are still poorly defined. Here we show that IL-12 activates an anti-angiogenic program in Con A-activated mouse spleen cells (activated spc) or human PBMC (activated PBMC). The soluble factors they release in its presence arrest the cycle of endothelial cells (EC), inhibit in vitro angiogenesis, negatively modulate the production of matrix metalloproteinase-9, and the ability of EC to adhere to vitronectin and up-regulate ICAM-1 and VCAM-1 expression. These effects do not require direct cell-cell contact, yet result from continuous interaction between activated lymphoid cells and EC. We used neutralizing Abs to show that the IFN-inducible protein-10 and monokine-induced by IFN-gamma chemokines are pivotal in inducing these effects. Experiments with nu/nu mice, nonobese diabetic-SCID mice, or activated spc enriched in specific cell subpopulations demonstrated that CD4(+), CD8(+), and NK cells are all needed to mediate the full anti-angiogenic effect of IL-12

Oxidative stress and cancer: the role of redox regulation.

Toyokuni S.

Biotherapy. 1998; 11(2-3):147-54.

[Study on antitumor effect and mechanism of aloe polysaccharides].

Wang Z, Wang Y, Huang Z, et al.

Zhong Yao Cai. 2001 May; 24(5):350-3.

OBJECTIVE: To study the antitumor activity and mechanism of aloe polysaccharides (AP). **METHODS:** AP was administered i.p. or i.v. to Sarcoma 180(S180) bearing mice or Hepatoma22(H22) bearing mice solely or combining with CTX, FU and ADM respectively. 10 days later, for S180 mice, the blood was analyzed, the tumor was peeled off and weighed, and the spleen index, thymus index was calculated. For H22 bearing mice, the survival rate was observed or the IL-2, TNF content in serum was tested. **RESULTS:** 25 mg/kg.d or 50 mg/kg.d AP group could evidently reduce the tumor weight of S180 bearing mice and prolong the survival time of H22 bearing mice. AP also could improve the antitumor effects of CTX, ADM, FU, and lessen the chemotherapy side-effects. Furthermore, AP could improve the level of IL-2, TNF in the serum of mice bearing S180 or H22. **CONCLUSION:** AP has the effects of antitumor, enhancing the antitumor activity of chemotherapy drugs and lessening their side-effects. This effect was possibly derived from inducing IL-2 and TNF producing in body and improving the immunity activity

How Aloe vera saved a life.

Whitaker J.

Health & Healing: Tomorrow's Medicine Today. 1995; 5(12)

Percutaneous tumor ablation with radiofrequency.

Wood BJ, Ramkaransingh JR, Fojo T, et al.

Cancer. 2002 Jan 15; 94(2):443-51.

BACKGROUND: Radiofrequency thermal ablation (RFA) is a new minimally invasive treatment for localized cancer. Minimally invasive surgical options require less resources, time, recovery, and cost, and often offer reduced morbidity and mortality, compared with more invasive methods. To be useful, image-guided, minimally invasive, local treatments will have to meet those expectations without sacrificing efficacy. **METHODS:** Image-guided, local cancer treatment relies on the assumption that local disease control may improve survival. Recent developments in ablative techniques are being applied to patients with inoperable, small, or solitary liver tumors, recurrent metachronous hereditary renal cell carcinoma, and neoplasms in the bone, lung, breast, and adrenal gland. **RESULTS:** Recent refinements in ablation technology enable large tumor volumes to be treated with image-guided needle placement, either percutaneously, laparoscopically, or with open surgery. Local disease control potentially could result in improved survival, or enhanced operability. **CONCLUSIONS:** Consensus indications in oncology are ill-defined, despite widespread proliferation of the technology. A brief review is presented of the current status of image-guided tumor ablation therapy. More rigorous scientific review, long-term follow-up, and randomized prospective trials are needed to help define the role of RFA in oncology

Radiofrequency ablation of adrenal tumors and adrenocortical carcinoma metastases.

Wood BJ, Abraham J, Hvizda JL, et al.

Cancer. 2003 Feb 1; 97(3):554-60.

BACKGROUND: The current study was performed to analyze the feasibility, safety, imaging appearance, and short-term efficacy of image-guided percutaneous radiofrequency ablation (RFA) of primary and metastatic adrenal neoplasms including adrenocortical carcinoma. **METHODS:** The procedure was performed using 36 treatment spheres on 15 adrenocortical carcinoma primary or metastatic tumors in eight patients over 27 months. Tumors ranged from 15 to 90 mm in greatest dimension with a mean of 43 mm. All patients had unresectable tumors or were poor candidates for surgery. Mean follow-up was 10.3 months. **RESULTS:** All patients were discharged or were free of procedure-related medical care 6-48 hours after the procedures without major complications. All treatments resulted in presumptive coagulation necrosis by imaging criteria, which manifested as loss of previous contrast enhancement in ablated tissue. Eight of 15 (53%) posttreatment thermal lesions lost enhancement and stopped growing on latest follow-up computed tomographic scan. Three of 15 (20%) demonstrated interval growth and four did not change in size. Of these four lesions, two showed contrast enhancement. For smaller tumors with a mean greatest dimension less than or equal to 5 cm, 8 of 12 (67%) tumors were completely ablated, as defined by decreasing size and complete loss of contrast enhancement. Three of 15 (20%) tumors and related thermal lesions were found to have disappeared nearly completely on imaging. **CONCLUSIONS:** Percutaneous, image-guided RFA is a safe and well tolerated

procedure for the treatment of unresectable primary or metastatic adrenocortical carcinoma. The procedure is effective for the short-term local control of small adrenal tumors, and is most effective for tumors less than 5 cm. The survival rate for patients with adrenocortical carcinoma improves when radical excision is performed in selected patients. Aggressive local disease control may potentially influence survival as well. However, further study is required to evaluate survival impact, document long-term efficacy, and to determine if RFA can obviate repeated surgical intervention in specific clinical scenarios

Percutaneous image-guided radiofrequency ablation of renal malignancies.

Zagoria RJ.

Radiol Clin North Am. 2003 Sep; 41(5):1067-75.

There is a growing body of experience supporting the use of image-guided RFA for the treatment of primary RCC. Because surgical resection is a technique with low mortality, and a proved success rate that is high, this must remain standard therapy for patients with potentially curable RCC. Some patients with low-stage RCC, however, may not be surgical candidates. Image-guided RFA is an option for treatment of these patients. In addition, image-guided RFA shows promise for the successful care of other patients with RCC. In particular, RFA has been used successfully for the treatment of intractable hematuria resulting from an RCC; local recurrences of RCC, both for attempted cure and for palliation of symptoms; and finally for the treatment of isolated metastases from RCC. As with the treatment of primary RCC, the data remain limited for these applications. This technique should be reserved until after standard therapies have been exhausted. It seems likely that some form of image-guided percutaneous tumor therapy, such as RFA, will become an alternative treatment modality in some patients with potentially curable RCC

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