

TREATMENT OF CANCER WITH CHINESE HERBAL MEDICINE

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The focus of this discussion is on the use of Chinese herbal medicine to treat cancer. Acupuncture and Chinese food therapy are typically combined with Chinese herbs in the treatment of cancer. In addition, European mistletoe (IsCADOR^R, Helixor^R) and other integrative therapies such as intravenous Vitamin C can also be used in combination with Chinese medicine to treat cancer.

The incidence of cancer in pet animals has been gradually increasing over the past few decades and the features of cancer (tumor genetics, biological behavior and histopathology) in dogs appear to parallel that of humans (Paoloni, M., Khanna C., *Science and Society: Translation of New Cancer Treatments from Pet Dogs to Humans*, *Nature Review Cancer*, 2008;8:147-156). Cancer incidence increases with age and according to the AVMA is the leading cause of death in dogs 10 years of age and older. Several European cancer group registries have been tracking and recording the occurrence of spontaneous tumors in pet animals as well. Cancer or malignant neoplasia is a class of disease that involves tissues with an altered cell population that operates independently of normal cellular controls. Three properties differentiate them from benign tumors; cancers grow uncontrollably, invade and destroy adjacent tissues and can metastasize and spread to other parts of the body via blood and or lymphatic circulation. Cancers consume body resources, grow at the expense of the individual and provide no benefit to the body. The most common cancers reported involved the skin (mast cell tumor), mammary glands (adenocarcinoma) and lymph tissue (lymphoma).

The treatment of cancer is difficult no matter what system of medicine or therapies are used. Although the same therapies to treat cancer in humans (chemotherapy, radiation, surgery) have been adapted for use in veterinary oncology, cure rates and long term survivability following chemotherapy is typically quite low and in the authors clinical experience closely parallels the findings in studies done in human cancer populations. (Morgan, G., Ward, R., Barton, M., *The contribution of cytotoxic chemotherapy to 5-year survival in adult malignancies*, *Journal Clinical Oncology*, Volume 16, Issue 8, 2004: 549-560). Out of desperation, many veterinary clients are now experimenting with the unsupervised use of non-conventional therapies in an effort to heal their pets. It is important for the veterinary practitioner to know what types of unconventional therapies are being used. These unconventional medical treatments fall into the category of complimentary and alternative medicine (CAM) for the most part. Much of the interest and use of CAM for pets parallels the development and use of CAM in the human medical field. Nowhere is the demand for CAM therapies in veterinary medicine more evident than for the treatment of cancer. In view of these circumstances, it would seem prudent for the practicing veterinarian to become educated on the use of CAM therapies that have shown reasonable clinical safety and efficacy to treat cancer without necessarily embracing them.

CANCER AND CONVENTIONAL MEDICINE

The etiology of cancer is thought to be changes in DNA that cause a decrease in, or elimination of normal controls over cellular growth, maturation and programmed cell death (apoptosis). These changes in DNA can develop as a result of genetic predisposition, exposure to radiation, carcinogenic chemicals or drugs, chronic infection or inflammation and or poor functioning of the immune system that fails to detect and eliminate abnormal cells at an early stage of replication. The most common theory on the development of cancer is that a genetic abnormality or predisposition exists in an individual that becomes activated by some type of environmental stressor and results in a lack of apoptosis, the unregulated growth of cells, and tumor development, thus the saying, “genetics loads the gun and environment pulls the trigger”.

CONVENTIONAL CANCER THERAPIES include chemotherapy drugs, exposure of the tumor to lethal doses of radiation, surgery to eliminate the tumor completely or debulk it, and in recent years, biological response modifiers have been added to the conventional arsenal to fight cancer. Chemotherapeutic agents are non-specific cellular toxins and are one of the primary treatments for cancer. The vast majority of chemotherapy drugs function by inhibition of tumor growth or by direct kill of tumor cells; however they are also toxic to normal cells at the same time. Chemotherapy drugs can adversely affect the internal organs and have a particularly detrimental affect on the rapidly dividing and renewing cells of the body such as the hematopoietic cells of bone marrow, the cells lining the gastrointestinal tract and epithelial cells. Radiation is another major cancer treatment, is primarily used as a local treatment and is only effective for certain types of cancer in veterinary medicine. The most common sites for radiation therapy include the brain, nasal, mouth, throat, mandible, chest/thorax, skin, legs, extremities and anus. Radiation can be used as a primary cancer treatment but it is most often used post-operatively to kill residual cancer cells. Good radiation technique seeks to minimize damage to adjacent normal tissues and organs. It is important to predict and recognize the major adverse effects of chemotherapy and radiation treatments in order to adequately protect against and or treat these effects using a Chinese medicine approach. Surgery is the considered the method of choice for many solid tumor cancers as the removal of the tumor can be curative. Biological response modifier (BRM) therapy is a relatively new addition to the biomedical approach to cancer therapy. BRMs are designed to strengthen, direct or restore the body's immune response against infection or cancer and decrease the side effects of cancer treatments. Conventional BRMs include interferon, interleukins, colony-stimulating factors, monoclonal antibodies, vaccines and gene therapy. The primary disadvantage to biomedical cancer therapies is that they symptomatically treat the end stage of the cancer process. The treatments are cytotoxic and non-specific and they destroy normal tissues at the expense of killing the cancer cells and can cause further damage to the immune system and internal organs. In addition, many chemotherapeutic agents and radiation are themselves oncogenic in nature. For the Chinese medicine practitioner it is important to thoroughly comprehend the mechanism of action of conventional cancer therapies; it is only through a comprehensive understanding of conventional treatments that a safe and effective interface with Chinese medicine can be achieved.

CANCER AND CHINESE MEDICINE

Documentation of the Chinese experience for the treatment of cancer dates back to the Yellow Emperor's Classic of Internal Medicine the Huang Di Nei Jing in the 2nd century BC. The Nei

Jing discusses clinical signs and symptoms that correspond to those of esophageal, uterine and bone cancer. Over 1,500 years ago Dr. Zhang Zhong Jing described treatments for disease processes similar to cancers in his Prescriptions from the Golden Cabinet, as did Dr. Sun Si Miao in One Thousand Golden Formulas. In 1933, Dr Pan Mingji articulated the Fu Zheng Pei Ben theory and principles of cancer treatment that are still in use today. (Pan, Mingji, Cancer Treatment with Fu Zheng Pei Ben Principle, Fujian Science and Technology Publishing House; 1992). Modern Chinese medicine uses scientific research, clinical experience and a comprehensive understanding of conventional cancer therapies in their approach to the treatment of cancer. Scientific studies in China, Korea and Japan to investigate the benefits of an integrative approach to cancer have shown that a combined approach results in a more comprehensive and synergistic effect. Integrative cancer management is currently the standard of practice in most Chinese, Korean and Japanese hospital oncology departments.

CANCER ETIOLOGY CHINESE MEDICINE

Cancer development theory in Chinese medicine is complimentary to that of conventional medicine in many ways; there is agreement in the belief that genetics and environment toxins all contribute and predispose to cancer development. However, Chinese medicine regards cancer, as the end result of multiple long-term, chronic body imbalances from both external and internal causes not a single end-stage event. These imbalances can result from genetic abnormalities or weakness (poor Kidney *jing*), invasion by external pathogenic factors, exposure to environmental toxins, chemicals, drugs, chronic infections or inflammation, internal pathogenic factors (multiple organ dysfunction) and psychological stress. In brief, tumors are considered to develop from a deficiency of Qi. Qi deficiency eventually leads to deficiency and stagnation of Qi and Blood and the development of Damp, Phlegm and Toxic Heat. Eventually there is an “entanglement” of Qi, Blood, Damp-Phlegm and Toxic Heat (can be exogenous or generated endogenously), that forms a mass or tumor. These elements are present in variable degrees depending on the individual animal. All cancer patients are considered to have abnormal circulation patterns and “sticky blood” (blood stagnation or stasis) to some degree. Because of the multi-factorial nature of cancer development, Chinese medicine holds that there can be no single cure for cancer for these reasons. Cancer or tumors are considered the end stage of chronic and complex disease processes and require strong material treatment and so the treatment of cancer requires the use herbal medicine; a strong material treatment. Acupuncture (an energetic treatment) and food therapy are typically used in the treatment of cancer, but in general they are not strong enough to effectively resolve or manage cancer when used alone.

CHINESE MEDICINE TREATMENT OF CANCER

Plants have a long history of use for the treatment of cancer, and many of our modern day chemotherapy drugs were derived from herbs. The actual active compound isolated from the plant may not be used as the drug, but it can potentially lead to the development of novel cancer therapeutic agents. It should be noted that it has been estimated that 60% of the anti-neoplastic agents currently used today are derived from natural sources that includes plants, marine organisms and micro-organisms. Plants have played a dominant role in the discovery of new compounds for the development of drugs to treat disease in the past and that trend still continues today. (See: Cragg G.M., and Newman D.J., *Plants as a Source of Anti-Cancer*

Agents, Journal of Ethnopharmacology Volume 100, Issues 1-2, 22 August 2005:72-79 100th Volume Special Section: Perspectives of Ethnopharmacology, and Efferth, T., Kahl, S., Paulus, K., Adams, M., Rauh, R., Boechzelt, H., Xiaojiang H., Kaina, B., Bauer, R.: *Phytochemistry and Pharmacogenomics of Natural products derived from traditional Chinese medicinal plants with activity against tumor cells* Molecular Cancer Therapy 7, (1) 2008). In view of these findings, it should be recognized that plants although “natural”, are not necessarily benign, particularly those plants with strong medicinal effects; most serious herbalists consider herbs to be drugs.

The treatment of cancer using Chinese medicine is largely based on five major treatment principles: *Fu Zheng Pei Ben*: “support Zheng Qi, strengthen resistance” *Huo Xue Qu Yu*: “invigorate Blood, dispel Stasis”, *Ruan Jian San Jie*: “soften hardness, dissipate nodules”, *Qing Re Jie Du*: “clear Heat, resolve Toxin” and *Yi Du Gong Du*: “use Toxin to fight Toxin”. Of these treatment principles *Fu Zheng Pei Ben* (*Fu Zheng*) is considered to be the most important treatment principle for the treatment and management of cancer. (Lahans, T., Integrating Conventional and Chinese Medicine in Cancer Care: A Clinical Guide, Elsevier, Philadelphia, PA, 2007). *Fu Zheng Pei Ben* theory is based on the principle that the body, when healthy, can regulate itself and fight off pathogenic influences. Chinese medicine treats the root cause of illness and every animal as a distinct individual. This is the single most distinguishing characteristic of Chinese medicine treatment of cancer as compared to the conventional medical treatment of cancer. The use of these five basic treatment principles will then vary depending on the case.

***Fu Zheng Pei Ben*: “support Zheng Qi, strengthen resistance”**

Fu Zheng translates as support the *zheng qi*, (the normal healthy qi or vital energy of the body) and *pei ben* translates as bank up or “cultivate” the root, to strengthen the body resistance. From a biomedical perspective this means that one must strengthen and support the animal's whole body resistance in order to effectively fight off disease; this includes promoting and enhancing the immune system and total body functions. Chinese herbs can be used to counter the adverse effects of biomedical cancer treatments such as vomiting, diarrhea, poor appetite, and myelosuppression. Herbs that are used according to *Fu Zheng* principles are used to build the *zheng qi* to treat these adverse effects. The herbs in this category help the animal to withstand normal duration and doses of chemotherapy or radiation. They can support the animal through cancer surgery and build the animal's immune system and resistance to independently aid the body in fighting the cancer or tumor directly. Some of these herbs are considered to be biological response modifiers. Some of the principal *Fu Zheng* herbs to treat cancer include: astragalus (Huang Qi), Ginseng (Ren Shen), Codonopsis (Dang Shen), Atractylodes (Bai Zhi), Ganoderma (Ling Zhi), and Cordyceps (Dong Chong Xia Cao).

***Huo Xue Qu Yu*: “invigorate Blood, dispel Stasis”**

Blood Stagnation-Stasis syndrome is considered to be both a cause of cancer and an end result. The Chinese medicine cancer treatment principle *Huo Xue Qu Yu* which translates as “invigorate Blood, dispel Stasis” is designed to address this common manifestation of cancer. Blood and congealed Phlegm are often seen together and is characterized by high blood viscosity, high fibrinogen (high FDP's) content, high platelet aggregation (low platelet count) and hypercoagulability. Herbs are used that promote blood circulation and treat Blood stasis using Blood cracking (invigorating) herbs. The treatment of Blood Stasis improves

microcirculation, decreases inflammation and promotes healing in surgical cases, increases oxygen levels to increase sensitivity to radiation therapy (radiation is less effective in hypoxic tissues) and helps prevent metastasis. From a conventional medicine perspective Blood stasis syndrome can correspond to and include the conditions of: anemia, thrombocytopenia, and disseminated intravascular coagulation (DIC). There are three basic types of Blood moving and regulating herbs used according to the *Huo Xue Qu Yu* cancer treatment principle: herbs that nourish and move blood by increasing the volume, herbs that regulate blood flow and promote blood circulation through the blood vessels to restore normal microcirculation, and herbs that “crack” static blood like dynamite to restore normal blood flow, help normalize blood viscosity, and break down the tough fibrin coating that surrounds many tumors. Some of the more commonly used blood moving/cracking herbs include: Curcuma (Yu Jin), Carthamus (Hong Hua), Persica (Tao Ren), Salvia (Dan Shen), Angelica (Dang Gui Wei), Artemisia (Liu Ji Nu), Ligusticum (Chuan Xiong), Sparganium (San Leng), and Milletia (Ji Xue Teng).

***Ruan Jian San Jie*: “soften hardness, dissipate nodules”**

The Chinese Medicine cancer principle *Ruan Jian San Jie* that translates as “soften hardness, dissipate nodules” uses herbs that have abilities to soften and dissolve hard masses by resolving or transforming Phlegm and are often combined with salty sea vegetables to accomplish this. Hard, firm tumors, masses and enlarged lymph nodes are considered a combination of Blood and Phlegm entanglement/stasis. Obstruction of qi flow is a critical component of Phlegm-diseases: it is both a cause of and an effect from Phlegm. Phlegm dissolving herbs help work similar to blood cracking herbs in that they promote the penetration of chemotherapeutic drugs and other herbs into the tumor mass. Sea vegetables contain high levels of salt that promote the entrance of fluids into masses; this is how they soften hardness. Many of the herbs in this category have direct anti-neoplastic properties. Commonly used herbs to soften hardness and dissolve masses include: Arca Wa- Leng Zi Bombyx (Jiang Can), Borax (Peng Sha), Eupolyphagia (Tu Bie Chong), Gallus (Ji Nei Jin), Laminaria (Kun Bu), Manitis (Chuan Shan Jia), Ostrea (Mu Li), Prunella (Xia Ku Cao), Testudinus (Gui Ban), Sargassum (Hai Zao), Fritillary (Zhe Bei Mu) and Pinellia (Ban Xia).

***Qing Re Jie Du*: “clear Heat, resolve Toxin”**

The Chinese Medicine cancer treatment principle of *Qing Re Jie Du* that translates as “clear Heat, resolve Toxin”, is addressing the concept of toxins as both a contributing cause of cancer and the result of cancer itself. The term Heat Toxins or Toxic Heat includes anything that transforms a simple abnormality into a serious, complex and difficult to control disease. Included in this category are infectious agents (viruses, bacteria, fungus), plants, snake or insect envenomization, chemicals, drugs, ionizing radiation, post-surgical septicemia and endotoxemia or any agent or process that causes acute or chronic infection, inflammation or tissue destruction. Heat toxins thus include any exogenous or endogenous pathogenic factors that have promoted the development of cancer, toxic heat that arises secondary to the cancer itself and toxicity that develops as a result of cancer therapies. Heat clearing herbs have been found to have potent antiviral, antibacterial, antifungal, antipyretic, anti-neoplastic and immune modulating effects clinically and *in vitro*. (Chen, J., Chen, T., *Chinese Medical Herbology and Pharmacology*, Art of Medicine Press, City of Industry, CA. 2001:171-253. In addition, heat-clearing formulas do not select for microbial resistance, promote residual infection, damage intestinal microflora or negatively impact the immune system, as do many pharmaceutical

drugs. Many of these herbs are often referred to as “anti-neoplastic herbs” and contain a variety of alkaloids that inhibit the growth of cancer cells. Some of the more common herbs used in *Qing Re Jie Du* therapy that clear heat and toxins include: Andrographis (Chuan Lian Zi), Coptis (Huang Lian), Scutellaria (Huang Qin), Phellodendron (Huang Bai), Houttuynia (Yu Xing Cao), Isatis (Da Qing Ye), Lithospermum (Zi Cao), Scutellaria (Ban Zhi Lian), Lonicera (Lian Qiao), Oldenlandia (Bai Hua She She Cao), Paris (Qi Ye Yi Zhi Hua), Patrinia (Bai Jiang Cao), Polygonum (Hu Zhang), Rabdosia (Dong Ling Cao), Rhubarb (Da Huang), Sophora (Ku Shen), and Taraxacum (Pu Gong Ying). Herbs in this category are cold and bitter (energetically) and can injure the middle jiao (Spleen and Stomach). Caution is recommended in administering these herbs to animals that already exhibit GIT disharmony (nausea, vomiting and diarrhea) and/or are currently taking antimicrobial drugs.

***Yi Du Gong* : “use toxin to fight toxin”**

Yi Du Gong Du is translated as “use toxin to fight toxin”, this Chinese Medicine cancer treatment principle recommends the use of known or potentially toxic herbs for the treatment of cancer that is regarded as a toxin or toxic process. Herbs in this category are analogous to conventional chemotherapy agents in that they also have a narrow therapeutic index and can be toxic. Many of these toxic herbs are the basis for modern day chemotherapy drugs and some have been tested for anti-cancer activity. Many of these herbs are used in China but most are not allowed for use in the United States. Herbs in this group include: Cantharide (Ban Mao), Nidus Vespae (Lu Feng Fang), Buthus Martensi (Quan Xie), Hirudo Medicinalis (Shui Zhi), Scolopendra Subspinipes (Wu Gong), Wu Tou, Herba Cirsii Japonici (Da Ji), Flos Daphnis Genkwae (Yuan Hua), Secretio Bufonis (Chan Su), and Sal Ammoniac (Nao Sha).

APPLICATIONS OF CHINESE MEDICINE TO TREAT CANCER

The integrated treatment of cancer includes the combined use of all the treatment principles described in a variety of ways to address a cancer. Factors that need to be evaluated when formulating a specific cancer treatment include the age and condition of the animal, the type and aggressiveness of the cancer, presence of metastatic disease, toxicity-side effects of the conventional therapy, degree of Qi and Blood deficiencies, Blood stasis, Phlegm, Toxic Heat, Zang Fu organ dysfunction, client (and animal) compliance and financial resources. In the author’s clinical experience in treating cancer using an integrative approach, Chinese herbal medicine has proven to be safe and effective. Optimal results for the integrative treatment of cancer using Chinese herbs is only possible when herbal treatments are prescribed by veterinarians that are trained in and have sufficient experience in Chinese herbology in addition to having a strong conventional medicine background. The treatment of cancer using both systems of medicine requires advanced Chinese medicine diagnostic skills to analyze multiple patterns of illness that present simultaneously and the ability to interpret conventional cancer therapies through the eyes of Chinese medicine. There are four common applications of Chinese medicine (and other CAM therapies) for the treatment of cancer in veterinary medicine:

- First, it is used as an adjunct therapy with conventional cancer therapies and acts to control or minimize side effects and help potentiate the effects of conventional cancer therapies to treat cancer. Chinese herbs can help strengthen the body’s immunity and resistance to help fight the cancer and prevent metastasis

- Second, it can be used as the primary cancer treatment in combination with conventional cancer therapies, or as a sole therapeutic modality in animals that are unable to undergo conventional cancer therapy, for animals with advanced cancers, or for animals that have tumors for which there is no known or measurable sensitivity to conventional cancer treatments
- Third, it is frequently used for palliative care alone or in combination with conventional drugs to help improve tumor related survival, relieve pain, control bleeding and treat weakness and deficiencies in dogs with advanced metastatic disease to improve good remaining quality of life
- Fourth it can be used to prevent the recurrence of cancer in animals that have a proven genetic predisposition (e.g. Bernese Mountain Dogs, Boxers etc) following surgery after curative tumor removal and for dogs in remission following chemotherapy

CANCER PREVENTION WITH CHINESE MEDICINE

The prevention of cancer recurrence is largely based on *Fu Zheng* therapy with the critical period of recurrence though to be within 2 years following conventional treatment. In human medicine, a cancer is typically not considered to be “cured” until the patients has undergone a 5-7 year tumor free period without recurrence. Congruently, acupuncture, herbal and nutritional therapy is usually recommended for a minimum of 2 years post conventional treatment. The maintenance treatment plan and schedule for these treatments depends on the individual case. As more research and studies are done to evaluate the benefits using a combined approach for the treatment of cancer in veterinary practice, the information presented here can be expected to change.

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