Acupuncture and Integrative Medicine as a Support System for Brain Tumor Treatment

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Integrative Medicine is a part of Modern Medicine

Mainstream Medicine
– Allopathic Medicine
CAM
– Complimentary and Alternative Medicine
NCCAM Groups CAM Modalities Into Five Major Domains

Alternative Medical Systems
- Traditional Oriental Medicine and Homeopathy

Mind-Body Intervention
- Meditation, Imagery, Relaxation

Biologically-Based Treatments
- Herbals, High-Dose Vitamin Therapy, Enzyme Therapy

Manipulative and Body-Based Approaches
- Massage, Yoga, Chiropractic

Energy Therapy
- Qi Gong, Reiki, Therapeutic Touch

An Increasing Number of Brain Tumor and Cancer Patients are Turning to Complimentary and Alternative Medicine (CAM)

CAM use among cancer patients is diverse and varies by region
- National Center for CAM estimates
  » 7-54% of cancer patients use CAM
  » 48-88% of cancer patients used CAM while being treated in comprehensive cancer centers in the USA
How Acupuncture Works
The Eastern Philosophical Point of View


How Acupuncture Works
The Western Medical Point of View

Principle Meridians as TCM’s Representation of the Nervous System

- Adult body arranged in sixth-week developmental position shows linear dermatomes and peripheral nerve distribution
- Linear patterns mirror Principal meridians.
- Autonomic branches of peripheral nerves and sympathetic innervation of corresponding vasculature account for non-local effects

Principle Meridians as TCM’s Representation of the Nervous System

- Band-like innervations of trunk consistent with segmental organization of trunk meridians
Clinical Applications of Acupuncture for Patients with Brain Tumors

Chemotherapy Related Side Effects
- Myelo-suppression: with leucopenia, thrombocytopenia, anemia
- Nausea
- Vomiting
- Mucositis (mucus membrane ulceration)

Radiotherapy Induced Symptoms
- Xerostomia (Dry mouth condition caused by radiation)

Symptom Management
- Cancer Pain

Other Symptoms as a Result of Chemotherapy Toxicity

Other Symptoms
- CNS Toxicity
  - Insomnia
  - Fatigue
  - Mood Disorder
  - Feeling a Loss of Control
- Loss of Appetite
- Weakened Immune System
- Alopecia
Other Clinical Issues

- Cancer Treatment Induced Early Menopause
- Chemotherapy-Induced Diarrhea or Constipation
- Post-Operative Pain
- Neuropathy
- Skin Reaction
- Liver Toxicity
- End of Life Care

Pain Management

- Naloxone blocks acupuncture-induced analgesia indicating CNS endorphin involvement
- Acupuncture increases the availability of µ-opiod receptors
- Effect unachievable via sham acupuncture (placebo).

From “The Neuroanatomic Basis of the Acupuncture Principal Meridians”, Doncher PT et al, Mayo Foundation for Medical Education and Research 2006 and “Traditional Chinese acupuncture and placebo (sham) acupuncture are differentiated by their effects on µ-opiod receptors (MORs)”, Harris RE et al, Elsevier Inc. 2009
Risk of Harm Associated with Non-Conventional Approaches to Cancer Management

- Symptom control of nausea and vomiting should be initiated after underlying causes have been identified
- Claims to “cure” cancer with natural and non-toxic treatment
- Herb-drug interactions
- Side effects associated with unsafe and unregulated non-conventional interventions

Requirements for Acupuncturists Working with Oncology patients

- Acupuncture License
  - National (optional)
  - State (required)
- General Medical Training Background
- Hospital System Experience
- Good Communication Skills
- Experience Treating Oncology Patients
Chinese Herbal Medicine to Support Patients Going Through Chemo and Radiation

Chemo-Support

Huang Qi - Radix Astragali
Ren Shen - Radix Ginseng
Ling Zhi - Ganoderma
Xi Yang Shen - Radix Panacis quinquefolii
Mu Dan Pi - Cortex Moutan
Zhi Mu - Radix Anemarrhenae
Fu Ling - Poria
Chen Pi - Pericarpium Citri reticulatae Mai Men Dong - Radix Ophiopogonis
Dang Gui - Radix Angelicae sinensis
Shan Yai - Rhizoma Pinelliae Preparatum
Lu Gen - Rhizoma Phragmitis
Shou Wu - Radix Polygoni multiflori preparata
Gou Qiu - Fructus Lycii
Wu Wei Zi - Fructus Schisandrae
Zhi Mu - Radix Anemarrhenae
Mu Dan Pi - Cortex Moutan
Gan Cao - Radix Glycyrrhizae uralensis
Sheng Di Huang - Radix Rehmanniae
Chen Pi - Pericarpium Citri reticulatae
Yu Zhu - Rhizoma Polygonati odorati

Radio Support

Huang Qi - Radix Astragali
Dang Gui - Radix Angelicae sinensis
Hong Hua - Flos Carthami tinctorii
Dan Shen - Radix Salviae miltiorrhizae
Shou Wu - Radix Polygoni multiflori preparata
Gou Qiu - Fructus Lycii
Wu Wei Zi - Fructus Schisandrae
Zhi Mu - Radix Anemarrhenae
Mu Dan Pi - Cortex Moutan
Gan Cao - Radix Glycyrrhizae uralensis
Sheng Di Huang - Radix Rehmanniae
Chen Pi - Pericarpium Citri reticulatae
Yu Zhu - Rhizoma Polygonati odorati

Analysis of Individual Herbs in Chemo Support
Pharmacology of Chemo Support Ingredients

Huang Qi - Radix Astragali Membranacei

- Enhancement of Immune Function
  The decoction given to mice increases the phagocytic activity of the reticuloendothelial system.
- Antibacterial Effect
  In vitro was effective against Shigella Shigae, Bacillus anthracis, Streptococcus hemolyticus, and Staphylococcus aureus.
- Effect on endurance
  Decoction of Huang Qi given to mice significantly increase the endurance in swimming tests.
Analysis of Individual Herbs in Chemo Support

Dang Shen- Radix Codonopsis pilosulae
• **Promotion of phagocytosis**
  Daily administration of decoction enhanced reticuloendothelial phagocytosis
• **Hematologic effect**
  Oral and intravenous use of Dang Shen in normal rabbits caused an increase in red blood cell count and hemoglobin.
• **Immunologic effect**
  Dang Shen inhibited the febrile reaction to toxins such as turpentine in mice and rats.
• **Anti-ulcerative effect**
  Pre-treatment with the decoction of the herb reduced the incidence of ulcers in rats due to stress of pylorus ligation.

Ling Zhi- Fructificatio Ganodermae lucidi
• **Antimicrobial Action**
  The decoction of the root showed strong antibacterial action in vitro against, Bacillus subtilis, Escherichia coli, Salmonella typhi, Staphylococcus aureus, Streptococcus hemolytic

Fu Ling- Scierotium Poriae Cocus
• **Antineoplastic effect**
  Produces an inhibition rate of 96.88% against sarcoma in rats.
• **Effect on Immune Function**
  Oral administration increased phytohemagglutinin-induced lymphocyte transformation rate and increased serum IgG.
Analysis of Individual Herbs in Chemo Support

Chen Pi- Pericarpium Citri reticulatae

- **Actions on gastro-intestinal smooth muscles**
  The herb decoction inhibited the motility of isolated small intestines of mice and rabbits.

Dang Gui- Radix Angelicae sinesis

- **Effect on platelet aggregation**
  Inhibited rat platelet aggregation and serotonin release

Ban Xia- Rhizoma Pinelliae ternatae

- **Anti-emetic action**
  Prevents early vomiting caused by deslanoside as well as emesis caused by orally-administered copper sulfate.

Current Research on Alternative Therapies

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<th>Symptom/Toxicity*</th>
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In the Battle of the Disease, Gallant as the Dragon and Fierce as the Tiger