The Integrative Approach to Head & Neck Cancer Patients

Delia Chiaramonte, M.D.
dchiaramonte@gilchristcares.org
Integrative Medicine

A philosophy of care that addresses the whole patient (mind, body, spirit), uses all effective treatment modalities, is informed by evidence and seeks optimal health (not just absence of disease)
Classification of Complementary (NOT Alternative!) Therapies

• Mind-Body
  – Relaxation techniques, guided imagery, self-hypnosis, journaling, meditation, tai chi, qigong, yoga

• Biochemical
  – Nutritional supplements, herbal medicine

• Biomechanical
  – Manual medicine, chiropractic, massage, acupuncture (?)

• Bioenergetic
  – Homeopathy, Reiki/Biofield therapies
Oncology Patients Use Complementary Medicine

17,639 patients at an NCI-designated Comprehensive Cancer Center were asked if they use complementary therapies...

87% said use one or more therapies

Judson et al Integr Cancer Ther 2016

A study of >1,000 patients with varied cancers undergoing radiotherapy...

59% reported using complementary therapies

Micke et al Eur J Integr Med 2009
Head & Neck Cancer Patients Use Complementary Modalities

• Study of 107 HNC patients
• 63% of patients used complementary therapies
• 6.5% informed their physicians about their use

Schultz et al, Nutr Cancer. 2012 Apr;64(3):377-85
What Can Integrative Medicine Add to Oncologic Care?

• Improve quality of life & decrease stress
  – Patient and family members
• Manage anxiety & depression
• Decrease disease symptoms
• Enhance perioperative care
  – Decrease pain, anxiety, sleep dysfunction
• Decrease treatment side effects
• Maximize physiologic functioning
  – Immune function, nutritional status, inflammation
Integrative Cancer Care

• At least 1/3 of cancer patients have **anxiety or depression**
  Linden et al J Affect Discord 2012
• 50-90% have **fatigue**
  Campos et al Ann Oncol 2011

• Use of an integrative oncology program
  • 6 weekly sessions (therapeutic art/music, massage, guided imagery...):
    • **Improved Quality of Life** \((p<0.001)\)
    • **Improved Fatigue** \((p<0.001)\)
    • **Improved Anxiety** \((p<0.001)\)
    • **Improved Depression** \((p<0.001)\)

  Bar-Sela et al Support Care Cancer 2015
Treatment Tools

- Acupuncture
- Mindfulness
- Meditation
- Integrative Nutrition/Supplication
- Creative Arts
- Positive Psychology
- Guided Imagery
- Therapeutic Dialogue
- Cognitive Behavioral Strategies
- Yoga
- Meditative Movement
- Massage
- Acupressure
- Exercise Counseling
- Reiki
- Sound Therapy
- Aromatherapy
- Integrative Psychotherapy
Mind-Body Techniques

• Meditation
• Guided Imagery
• Biofeedback
• Hypnotherapy
• Diaphragmatic Breathing
• Prayer
• Yoga
• Tai Chi/Qigong, etc...
Mindfulness Based Stress Reduction (MBSR)

- Standardized program developed to reduce suffering for people with chronic pain
- 8 week group experience
  - 2.5 hour sessions
  - 7 hour retreat
- Experiential
  - Meditation, yoga, body scan relaxation
- Daily home practice is required (45 min/day)
Mindfulness-Based Stress Reduction for Cancer Patients (review)

- Improved cancer pain
- Decreased emotional distress related to pain
- Improved QOL in breast cancer patients
- Improved mood
- Decreased distress

FREE Online MBSR Course

www.palousemindfulness.com
Meditation Improves Psychological Wellbeing

• Systematic review
  – 47 RCTs with 3515 participants
  – Control groups were comparable to intervention re: time and attention

• Mindfulness Meditation programs:
  – Improved anxiety (effect size 0.38, 95%CI 0.12-0.64)
  – Improved depression (effect size 0.30, 95% CI 0-0.62)

Goyal et al JAMA Intern Med. 2014 Mar
Mind-Body Interventions for Sleep in Cancer Patient

• Meta-analysis of RCTs
• 15 studies, 1,405 total participants
• Effect size -0.43, 95% CI -0.24 to -0.62
• Mind body interventions significantly improved sleep in cancer patients (p<0.001)

Systematic Review of Mind-Body Therapies for Cancer Fatigue

- RCTs of mind-body practice vs. control for fatigue mgmt
- 55 trials, 4975 patients
- **Mindfulness & relaxation significantly improved cancer fatigue**

Duong et al Crit Rev Oncol Hematol 2017
Guided Imagery

- Decreased post op pain
- Listening to guided imagery CD 2 weeks before and 3 weeks after surgery → reduced pain
  - Randomized, controlled
  - Persisted at 3 weeks


www.healthjourneys.com
Guided Imagery and Progressive Muscle Relaxation in Cancer Patients

- GI and PMR in patients getting chemo
- Randomized, controlled trial, n=208
- Intervention group:
  - Decreased pain
  - Decreased fatigue
  - Increased HRQOL

Charalambous et al, PloS One 11(6) 2016
Guided Imagery Resources

• www.healthjourneys.com

• Apps:
  – Headspace
  – Insight Timer
  – Calm
  – The Mindfulness App
  – Buddhify
  – Stop, Breathe and Think
Yoga/Therapeutic Yoga

• Systematic Review (25 studies)
• Yoga improved
  – Depression
  – Anxiety
  – QOL
  – Sleep
  – Fatigue

Danhauser et al, Support Care Cancer 2017
Biomechanical
Acupuncture for Cancer Pain

• Reduces cancer related pain
  – Surgical pain, malignancy related
• Reduces radiation-induced pain and dysphagia
• Improves sleep, anxiety, nausea, fatigue
  – Inpatient, cancer center
• Improves chemo-induced peripheral neuropathy

The Chinese Perspective of Acupuncture

• Balance of opposing forces: yin/yang
  – Yin: cold, slow, passive
  – Yang: hot, excited, active

• Health = balance, disease = imbalance

• Imbalance leads to blockage of qi (vital energy) along meridians (pathways)

• Acupuncture: unblock Qi with needles at prescribed points along meridians
Western Theories of Acupuncture

• Gate Control Theory
  – **Stimulate inhibitory nerve fibers** reducing transmission of the pain signal to the brain

• Endorphin Model
  – **up-regulation of μ-opioid receptor** binding availability in the central nervous system Harris et al. Neuroimage 2009

• Neurotransmitter Model
  – Animal studies: acup can **modulate** serotonin, norepi, & neurons that transmit or secrete GABA
Acupuncture + SSRI for Depression

- Meta-analysis, 13 RCTS, 1046 participants
- Acupuncture plus SSRI for depression vs. SSRI alone
- Results → Acupuncture + SSRI was more effective for depression than SSRI alone (p<0.001)

Chan et al, J Affect Disord 2015
Acupressure

- **Cochrane review** of multiple interventions using P6 (wrist) acupuncture point for post op N/V
  - 40 trials, 4858 participants
  - P6 stimulations (acupuncture, acupressure, acu stim)
  - All methods (invasive and non invasive) were effective
    - Reduced nausea
    - Reduced vomiting
    - Reduced need for rescue nausea medicine

Cochrane Database Syst Rev. 2009 Apr 15;(2), Lee et al.
Chiropractic

• Spinal Manipulation Effective for:
  o Back pain – acute, subacute and chronic
  o Migraine headache
  o Cervicogenic headache/dizziness


• Improves cervicogenic headache (syst review)

• Improves shoulder and neck pain
  Bergman et al J Manip Physiol Ther 2010

• Increases nociceptive threshold in horses
  Sullivan et al Equine Vet J 2008
Chiropractic in Cancer?

• Most literature = case reports
• Safely used in a patient with spinal mets (case report)
  – Kanga et al, J Can Chiropr Assoc 59(3), 2015
• Can be helpful for stress-related pain conditions (neck pain, headache) or non-cancer related pains (functional LBP)
• Safest approach
  – Avoid areas with bony mets
  – Chiropractor experienced with cancer patients
Massage – Post Op

• Meta-analysis of 10 trials $\rightarrow$ a single dose of massage significantly improved post op pain
  
  Kukimoto et al, Pain Manag Nurs, 2017

• Systematic review of 16 trials $\rightarrow$ effective for pain and anxiety in surgical patients
  
  Boyd et al, Pain Med, 17(9), 2016

• Randomized trial of veterans undergoing major surgery $\rightarrow$ safe and effective adjuvant for post op pain
  
  Mitchinson et al, Arch Surg, 142(12), 2007
Cancer Massage

• Decreased cancer pain compared to both active comparators and usual care
  - Boyd et al, Pain Med, 17(8), 2016
  - Lee et al, Integr Cancer Ther 14(4), 2015

• Improved pain associated with bone metastases
  - Jane et al, Pain 152(10), 2011

• Improved pain in children with cancer

Use massage therapist experienced in cancer care
Massage for Cancer Fatigue

- **Hand massage** during chemo improved
  - Fatigue
  - Anxiety
  - Muscular discomfort
  - Stress
  - Relaxation
  - Emotional well-being

Cutshall et al, Explore, 2017
Reiki

- Limited evidence
- Very low risk
- Literature review 2014
  - Studies 2000-2014
  - 49 articles screened, 12 fully reviewed, 7 studies met criteria
  - Reiki decreased pain and anxiety

  Thrane et al, Pain Manag Nurs 15(4) 2014
Pain
Cancer Pain is Common

- After curative treatment: 39%
- During cancer treatment: 55%
- Advanced/metastatic: 64%

Not all pain in cancer patients is related to the cancer

Pain Is More Than Nociception

Nociception
• Stimulated nerves send info to brain

Pain
• Subjective perception affected by emotions, genetics, social connections, context, inhibitors/enhancers
How the Mind Processes Pain

ANTERIOR CINGULATE CORTEX
Registers unpleasant feelings when things go wrong, either physical or emotional.

PREFRONTAL CORTEX
Focuses on negative personal implications of pain. Heightened activity seen in anxious people.

RIGHT LATERAL ORBITOFRONTAL CORTEX
Evaluates sensory stimuli and decides on response, particularly if fear is involved. Mindfulness meditation calms down this response.

NUCLEUS ACCUMBENS
Releases dopamine and serotonin during pleasure or pain.

Therapeutic Approaches

- **44%**
  Decrease in pain reported by 15 undergraduates when they focused on a loved one’s photo while exposed to a heated probe.

- **40%**
  Decrease in pain intensity reported by 15 people who learned mindfulness meditation and used it while exposed to a heated probe.

- **30%**
  Percentage of people in a study of 422 fibromyalgia patients who reported less pain after receiving cognitive behavioral therapy.

Sources: Sean Mackey, Stanford; PLoS One; Journal of Neuroscience; Archives of Internal Medicine

SOMATOSENSORY CORTEX

INSULAR CORTEX

THALAMUS

AMYGDALA

ACC

PREFRONTAL CORTEX
“Catastrophizing” and Pain

Which Comes First?

- N=38, healthy, capsaicin cream to hand
- Measured pain level and catastrophizing
  - Early (0-15 min)
  - Mid (15-30 min)
  - Late (30-35 min)
- Higher early catastrophizing → increased pain
  - Higher early pain did NOT increase catastrophizing

Catastrophizing Worsens Pain

The Brain and Pain

• The brain receives a sensation → “decides” if it hurts
  – **Meaning** – anxiety makes post mastectomy pain worse *(Arch Clin Psych 2016)*
  – **Nocebo Response** – “your joints are a mess”
  – **“Pain Memory”** – phantom pain worse if pre-amputation pain

**Increased Perception of Threat** → **Increased Pain**
Central Sensitization

Amplification of neural signaling within the CNS that elicits pain hypersensitivity

The CNS can change, distort or amplify pain

Symptoms no longer directly reflects the peripheral noxious stimuli

Pain “Neurotag”

Woolf C, Pain 2011 March
Maladaptive Cognitions in Chronic Pain

- Pain catastrophizing
- Fear of pain
- Kinesiophobia
- Hypervigilance

Central Sensitization + Negative Cognitions → Pain Amplification + Increasing Disability
Pain Management Goal

- Function
- Function
- Function
- NOT total reduction of pain
- NOT a particular pain score
- Quality of life
Biochemical
(Herbs & Supplements)
Ginger For Post-Chemo Nausea

• 60 chemo cycles (cisplatin/doxorubicin) randomized to ginger or placebo capsules + usual care (odansetron/dexamethasone)

• Acute mod-severe nausea in 93.3% of control and 55.6% of ginger group (p=.003)

• Delayed mod-severe nausea in 73.3% of control and 25.9% of ginger group (p<.001)

Ginger for Chemo-Related Nausea

• RCT of 576 chemo patients → ginger plus standard antiemetic signif better than antiemetic alone
  Ryan et al Support Care Cancer 2012

• How to use it:
  – 0.5-1.0 grams once a day
    • Can split in 2 doses
    • Higher doses don’t work better (actually worse)
  – Can use fresh or dried ginger
  – Ginger flavoring won’t work
  – Side effects: heartburn, flushing, rash
Aromatherapy for Nausea & Vomiting

• RCT of spearmint and peppermint oils for chemo-induced N/V vs. standard treatment
• Significantly reduced N/V
• No adverse effects
• Overall costs decreased in aromatherapy group

Tayarani- Najaran et al 2013
Medicinal Mushrooms

• Component of Traditional Chinese Medicine
  – Common cancer treatment in Asia

• Mechanism against cancer
  – Polysaccharide α- and β-glucans stimulate immune system
    • not recommended in lymphomas

• Shiitake mushroom
  – Innate & adaptive immune activity against cancer

• Maitake mushroom
  – Extract has anti-tumor activity
Turmeric/Curcumin

- Turmeric/Curcumin (ginger family)
  - Antioxidant & anti-inflammatory
  - Benefit in perioperative pain, musculoskeletal pain
    - Take TID for pain
  - EQUAL in pain improvement to NSAIDs with less risk
    - Gaffey et al, JBI Database System Rev Implement Rep 13(2), 2015
  - Works better if taken with black pepper/piperine
  - Don’t take during chemo/radiation
Society for Integrative Oncology
Clinical Practice Committee

• Sorted through the research on supplements for cancer patients

• Most support for:
  – Curcumin, glutamine (?), vitamin D, Maitake mushrooms, fish oil, green tea, milk thistle, Astragalus (TCM), melatonin, and probiotics

Frenkel et al, Integr Cancer Ther 2013
Putting Integrative Medicine Into Practice

• Minimize systemic inflammation
  - Food, sleep, stress management

• Mind-Body Techniques
  - Guided imagery, MBSR, meditation, tai chi, yoga, HRV biofeedback...

• Manual Medicine
  - Chiropractic, massage

• Acupuncture

• Consider biologically active supplements
  - Fish Oil, probiotics, Vit D, Curcumin, mushrooms
Mindfulness

Mind Full, or Mindful?
Information Sources

• Nat’l Cntr for Complementary & Integrative Health

• Natural Medicines Comprehensive Database (fee)
  – naturalmedicines.therapeuticresearch.com
  – Evidence-based, updated daily
  – Professional and consumer versions

• [www.healthjourneys.com](http://www.healthjourneys.com) (guided imagery CDs)

And A Few More...

• OCCAM

• Consumer Lab
  – https://www.consumerlab.com

• NIH
Thanks For Your Attention

“On the plus side, you’ve cured my back pain.”

dchiaramonte@gilchristcares.org