CAM for Prevention and Integrated Treatment of Cancer

Prof. Dr. Gustav Dobos
Kliniken Essen-Mitte, Germany
Academic teaching hospital of the University Duisburg-Essen
From CAM to Integrative Medicine

Complementary and Alternative Medicine (CAM)
Mostly traditional healing techniques
Inexpensive, safe, beneficial

Integrative Medicine
The best of evidence-based CAM in conjunction with mainstream care
Integrative Medicine combines mainstream medical therapies and CAM therapies for which there is some high-quality scientific evidence of safety and effectiveness.

Definition of the NCCAM, NIH
Model: *Integrative Oncology*

*Integrative Oncology* combines scientifically proven, mostly traditional healing methods with mainstream medicine to reduce side-effects and treat patients with cancer more effectively.
What are realistic aims of *Integrative Oncology?*

... *to improve:*

• management of side-effects of chemotherapy (fatigue, nausea, xerostomia, joint pain, postmenopausal symptoms)
• physical and psychological fitness
• quality of life (improves depression, distress, helpless/hopelessness and anxiety)
• patient compliance (reduced therapy stop)
• … can serve as prophylaxis (primary and secondary)
• … can serve as motivation for lifestyle change
• prognosis?!
Methods/systems used in „CAM/Integrative Oncology“

- Nutrition
- Exercise
- Mind/Body Medicine (Salutogenesis)
- Meditation
- Mindfulness based stress reduction
- Spirituality
- Acupuncture
- Chinese herbal treatment
- Herbal treatment
- Vitamins and trace-elements
- Massage
- Reflexology
Whole system approaches

- Homeopathy
- Anthroposophic Medicine
- TCM
- Ayurveda
- Phytotherapy
- Shiatsu
- Naturopathy
Homeopathy and Cancer - Facts

Swiss HTA report: sufficient supporting evidence for the pre-clinical and clinical effects of homeopathy; a safe and cost-effective treatment.

As to cancer:
Small amount of evidence to indicate it can be useful in treating the side-effects of conventional cancer treatment and helping with patient recovery.
Authors' conclusions

“[...] we observed an improvement of quality of life as well as a tendency of fatigue symptoms to decrease in cancer patients under complementary homeopathic treatment.”
Acupuncture
Integrative Oncology patient care in breast cancer out-patients clinic

- **acupuncture**
  - after each chemotherapy
  - 2 x during radiation
  - 4 x during endocrine therapy
  - against pain and other side-effects in each treatment phase

- **number of acupuncture sessions 2011**
  - ear acupuncture 1,587
  - body acupuncture 560
  - trigger acupuncture 78
  - electro acupuncture 41
Acupuncture in cancer care

How is the evidence?

Proven efficacy for chemotherapy-related side effects

- Pain (White P. 2004)
- Nausea and Vomiting (Shen J. 2000)
- Headache (Vickers A. 2004)
- Arthritis (Berman B. 2004)
- Neuropathy (Wong R. 2006, Schroder S. 2007)
- Xerostomia (Johnstone 2002, Pfister D. 2008)
- Hot Flashes (Huang M. 2006)
Chinese herbal therapy
A Prospective, Controlled Study of the Botanical Compound Mixture LCS101 for Chemotherapy-Induced Hematological Complications in Breast Cancer

Yaal-Hahoshen et al. *The Oncologist* 2011

**Conclusion**

The addition of LCS101 to anthracycline- and taxane-based chemotherapy is safe and well tolerated, and may significantly prevent some chemotherapy-induced hematological toxicities in early breast cancer patients. These results should encourage further larger and more extensive clinical trials.
Herbs, nutrition and dietary supplements

Mistletoe
Soy
Selenium
Medicinal mushrooms (e.g. Maitake)
Zinc

...

Concerns:
Contamination
Dosage and toxicity
Herb-drug interactions
Do Chinese and other herbs really decrease side-effects of chemotherapy, or do they only decrease the general effectiveness of the chemotherapy?

Cytochrom P450 3A4
Important isoenzyme:
- Cyclophosphamide
- Doxorubicin
- Vinblastin
- Tamoxifen
- Amitriptylin
Potential interactions with chemotherapy or antihormone therapy

Echinacea
Ephedra
Ginkgo
St. John’s wort
Soy
Valerian
Red clover
Peppermint
Grapefruit juice
...
Chinese foot massage
Chinese foot massage

Reduction of anxiety, pain, nausea, fatigue, depression, and improves quality of life

Safe when performed by trained and experienced practitioners

Cassileth 2004
Mind/Body Medicine  
Def.: NIH

„Mind/Body Medicine focuses on the interactions among the brain, mind, body and behavior and the powerful ways in which emotional, mental, social, spiritual and behavioral factors can directly affect health. It regards as fundamental an approach that respects and enhances each person’s capacity for self-knowledge and self-care and it emphasizes techniques that are grounded in this approach.“
"Mind/Body Medicine
Are interventions, that use a variety of techniques
designed to facilitate the mind’s capacity
to affect bodily function and symptoms"
Team of Mind/Body Instructors
- non-medical practitioners -

MBSR-teacher
Psychologist
Psycho-Oncologist
Sportstherapists
Nutritionists
Physiotherapists

Other nmp:

CAM-practitioners
Nurses
Body work and massage therapists
Physical activity after breast cancer diagnosis

... it can reduce the risk of death after diagnosis
... it can reduce fatigue, psychological symptoms and enhance health-related quality of life

(Holmes et al., 2005)
# The impact of nutrition and exercise on survival in breast cancer patients

## Pierce study (Pierce et al., 2007):

<table>
<thead>
<tr>
<th>Large prospective study:</th>
<th>1490 breast cancer survivors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow-up:</td>
<td>10 years</td>
</tr>
<tr>
<td>Physical activity:</td>
<td>corresponding to 30 minutes</td>
</tr>
<tr>
<td></td>
<td>6x/week</td>
</tr>
<tr>
<td>Nutrition/diet:</td>
<td>daily intake of 5 portions of</td>
</tr>
<tr>
<td></td>
<td>fruits and vegetable/day</td>
</tr>
</tbody>
</table>
Survival rates (Pierce et al., 2007)

The combination of regular physical activity and intake of 5 portions of fruits/vegetable per day yields the best increase in survival rates among breast cancer survivors.

...mortality rate reduced by 50%!
The specific situation in cancer patients ...

… the diagnosis, CANCER can be compared to an earthquake on Richterscale of 8, only that it happens on 1m².

Quotation of a cancer patient
Mindfulness-Based Stress Reduction (MBSR) for Integrative Cancer Care – a Summary of Evidence

Musial et al. 2011

19 studies were found to be eligible.

Conclusion:

There is evidence that MBSR can improve mood and distress in cancer patients, while physical symptoms are unlikely to improve as a consequence of MBSR interventions.
Yoga in breast cancer
Meta-analysis: Yoga in breast cancer

General quality of life

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Yoga Mean</th>
<th>Yoga SD</th>
<th>Yoga Total</th>
<th>Control Mean</th>
<th>Control SD</th>
<th>Control Total</th>
<th>Weight</th>
<th>Std. Mean Difference IV, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Danhauer 2009</td>
<td>114.8</td>
<td>19.1</td>
<td>13</td>
<td>98.4</td>
<td>31.8</td>
<td>14</td>
<td>20.7%</td>
<td>0.60 [-0.17, 1.38]</td>
</tr>
<tr>
<td>Littman 2011</td>
<td>90.3</td>
<td>11.1</td>
<td>30</td>
<td>87.7</td>
<td>15</td>
<td>27</td>
<td>25.8%</td>
<td>0.20 [-0.32, 0.72]</td>
</tr>
<tr>
<td>Moadel 2010</td>
<td>75.2</td>
<td>18.96</td>
<td>84</td>
<td>69.94</td>
<td>19.39</td>
<td>44</td>
<td>28.7%</td>
<td>0.27 [-0.09, 0.64]</td>
</tr>
<tr>
<td>Raghavendra 2007</td>
<td>142.1</td>
<td>10.2</td>
<td>28</td>
<td>111.7</td>
<td>25.5</td>
<td>34</td>
<td>24.8%</td>
<td>1.49 [0.92, 2.06]</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>155</td>
<td></td>
<td></td>
<td>119</td>
<td></td>
<td>100.0%</td>
<td></td>
<td>0.62 [0.04, 1.21]</td>
</tr>
</tbody>
</table>

Heterogeneity: \( \tau^2 = 0.28; \text{Chi}^2 = 14.48, \text{df} = 3 (P = 0.002); I^2 = 79\%

Test for overall effect: \( Z = 2.08 \) (\( P = 0.04 \))

Medium effect on GQL

Meta-analysis: Yoga in breast cancer

### Anxiety

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Yoga Mean</th>
<th>SD</th>
<th>Total</th>
<th>Control Mean</th>
<th>SD</th>
<th>Total</th>
<th>Weight</th>
<th>Std. Mean Difference IV, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banerjee 2007</td>
<td>4.1</td>
<td>1</td>
<td>35</td>
<td>10.5</td>
<td>1.8</td>
<td>23</td>
<td>17.5%</td>
<td>-4.60 [-5.62, -3.59]</td>
</tr>
<tr>
<td>Chandwani 2010</td>
<td>28</td>
<td>2.2</td>
<td>27</td>
<td>30.2</td>
<td>2.4</td>
<td>31</td>
<td>20.4%</td>
<td>-0.94 [-1.49, -0.39]</td>
</tr>
<tr>
<td>Moadel 2010</td>
<td>8.1</td>
<td>7.64</td>
<td>84</td>
<td>10.26</td>
<td>8.08</td>
<td>44</td>
<td>21.1%</td>
<td>-0.28 [-0.64, 0.09]</td>
</tr>
<tr>
<td>Raghavendra 2007</td>
<td>29.2</td>
<td>3.8</td>
<td>28</td>
<td>37.5</td>
<td>7.6</td>
<td>34</td>
<td>20.3%</td>
<td>-1.32 [-1.88, -0.77]</td>
</tr>
<tr>
<td>Vadiraja 2009</td>
<td>4.88</td>
<td>3.34</td>
<td>42</td>
<td>8.12</td>
<td>3.8</td>
<td>33</td>
<td>20.7%</td>
<td>-0.90 [-1.38, -0.42]</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>216</td>
<td></td>
<td>165</td>
<td>100.0%</td>
<td></td>
<td></td>
<td>-1.51 [-2.47, -0.55]</td>
<td></td>
</tr>
</tbody>
</table>

Heterogeneity: Tau² = 1.10; Chi² = 64.57, df = 4 (P < 0.00001); I² = 94%
Test for overall effect: Z = 3.09 (P = 0.002)

... strong effect on anxiety!

### Depression

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Yoga Mean</th>
<th>SD</th>
<th>Total</th>
<th>Control Mean</th>
<th>SD</th>
<th>Total</th>
<th>Weight</th>
<th>Std. Mean Difference IV, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banerjee 2007</td>
<td>3.4</td>
<td>0.5</td>
<td>35</td>
<td>9.7</td>
<td>1.2</td>
<td>23</td>
<td>16.9%</td>
<td>-7.34 [-8.82, -5.86]</td>
</tr>
<tr>
<td>Chandwani 2010</td>
<td>6.6</td>
<td>2.1</td>
<td>27</td>
<td>7</td>
<td>2.2</td>
<td>31</td>
<td>21.0%</td>
<td>-0.18 [-0.70, 0.33]</td>
</tr>
<tr>
<td>Danhauer 2009</td>
<td>8.1</td>
<td>8.9</td>
<td>13</td>
<td>17.8</td>
<td>16.9</td>
<td>14</td>
<td>20.1%</td>
<td>-0.69 [-1.47, 0.09]</td>
</tr>
<tr>
<td>Raghavendra 2007</td>
<td>6.6</td>
<td>4.6</td>
<td>28</td>
<td>14.2</td>
<td>6.6</td>
<td>34</td>
<td>20.9%</td>
<td>-1.30 [-1.85, -0.74]</td>
</tr>
<tr>
<td>Vadiraja 2009</td>
<td>4.14</td>
<td>3.45</td>
<td>42</td>
<td>6.53</td>
<td>3.78</td>
<td>33</td>
<td>21.1%</td>
<td>-0.86 [-1.13, -0.19]</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>145</td>
<td></td>
<td>135</td>
<td>100.0%</td>
<td></td>
<td></td>
<td>-1.83 [-3.13, -0.53]</td>
<td></td>
</tr>
</tbody>
</table>

Heterogeneity: Tau² = 2.04; Chi² = 83.37, df = 4 (P < 0.00001); I² = 95%
Test for overall effect: Z = 2.75 (P = 0.006)

... strong effect on depression!
Guidelines of the German Society for Obstetric Oncology (AGO) 2011:

- **MBSR**
  (Mindfulness-Based Stress Reduction)
  
- **Yoga**

Oxford / AGO
LoE / GR

2b B +
2b B +
1. learn to elicitate the *Relaxation Response*
2. healthy diet
3. exercise
4. behavioural elements (cognitive restructuring)
5. social group support (→ self help group)
Which are the crucial aims for the integration of holistic approaches and CAM into cancer treatment?

• identify functioning models for “Integrative Oncology”
  
  Team work is crucial and therefore the acceptance of all therapists!

• scientific evaluation (evidence supporting the efficacy, safety and costs)
  
  -> GET FUNDING!

• developing curricula for students, physicians, oncologists and non-medical practitioners