Le medicine non convenzionali
Tra prove di efficacia, rischi e stregoneria

Conduce: Nino Cartabellotta
Discussant: Gianni Garozzo, Maurizio Mancuso, Raffaele Pastore, Mara Ramploud
1. Differenze tra CAM e CM

<table>
<thead>
<tr>
<th>Conventional</th>
<th>Unconventional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainstream</td>
<td>Alternative</td>
</tr>
<tr>
<td>Orthodox</td>
<td>Unorthodox</td>
</tr>
<tr>
<td>Regular</td>
<td>Irregular</td>
</tr>
<tr>
<td>Scientific</td>
<td>Unscientific</td>
</tr>
<tr>
<td>Evidence based</td>
<td>Not evidence based</td>
</tr>
<tr>
<td>Allopathic</td>
<td>Naturopathic</td>
</tr>
<tr>
<td>Western</td>
<td></td>
</tr>
<tr>
<td>Modern</td>
<td></td>
</tr>
</tbody>
</table>

The most compelling (and most “inflammatory”) label is that conventional medicine is scientific and that unconventional is unscientific.

Dalen JE. Arch Intern Med, 1998
1. CAM is predominantly **private medicine**, not reimbursed within the healthcare system.

2. Providers of CAM often **lack medical training**, and often are not physicians.

3. The **effectiveness and safety** of many forms of CAM is **not proven**, according to the EBM standards.

*Ernst E, et al. J Med Ethics 2004*
4. The **research funds** for CAM are currently **scarce**, much more so than in CM.

5. CAM **lacks** a tradition or culture of modern, scientific research comparable to CM.

6. CAM is claimed to be holistic and its **benefits of CAM** are thought to be mental, psychological, spiritual, and social; thus they **can be less tangible or measurable than those of CM**.
Dalen JE

“Conventional” and “Unconventional” Medicine
Can they be integrated?

Arch Intern Med 1998;158:2179-81
CM & CAM: Can they be integrated?

CM
Conventional Medicine

CAM
Complementary and Alternative Medicine

EBM
Tonelli MR, Callahan TC

Why alternative medicine cannot be evidence based

Acad Med 2001;76:1213-20
1. Differenze tra CAM e MC
2. **Efficacia delle CAM**
3. Rischi delle CAM
4. CAM ed EBM
La gerarchia delle prove di efficacia

1. Revisioni sistematiche di RCTs
2. Trials controllati e randomizzati
3. Trials controllati non randomizzati
4. Trials non controllati
5. Studi osservazionali analitici
6. Studi osservazionali descrittivi
7. Opinionì, fisiopatologia
Evaluating complementary medicine: methodological challenges of randomised controlled trials

BMJ 2002;325:832-4
• CAM should be evaluated as rigorously as conventional medicine to protect the public from charlatans and unsafe practices, but many practitioners of CAM are reticent about evaluation of their practice.

• In defence, many CAM practitioners argue that research methods dissect their practice in a reductionist manner and fail to take into account complementary medicine's holistic nature leading to invalid evaluation.
CAM: Where is the evidence?

• CAM cannot be evidence-based in the conventional sense of the word.
• Softer types of evidence need to be taken into consideration as well.
• Placebo effects must not be dismissed as nonbeneficial.
• The healing encounter includes significant factors that may never be quantifiable
• The scientific method cannot measure hope, divine intervention, or the power of belief.
• Research in CAM must consider social, cultural, political, and economic contexts.

Ernst E. J Fam Pract, 2003
Quali fattori confondenti negli studi non controllati?

- Effetto reale del trattamento
- Effetto placebo
- Aspettative ottimistiche
- Effetto Hawthorne
- Miglioramento spontaneo
Soddisfazione dei pazienti

Clinical outcome

Physical environment

Interpersonal relationship
Trials non controllati e studi osservazionali

Nella CM il loro ruolo è limitato a:

1. Malattie rare
2. Studi di fase II
3. Quando sussistono tutte le condizioni seguenti:
   - malattia ad esito sfavorevole/fatale
   - drammatica efficacia del trattamento
   - effetti sfavorevoli accettabili
   - assenza di trattamenti alternativi
   - presupposti fisiopatologici convincenti
Parachutes reduce the risk of injury after gravitational challenge, but their effectiveness has not been proved with randomised controlled trials

Smith GCS et al. BMJ, 2003
Trials non controllati e studi osservazionali

- Vitamina C (scorbuto)
- Insulina (coma diabetico)
- Antibiotici (polmonite pneumococcica, endocardite batterica)
- Vitamina B12 (anemia perniciosa)
- Appendicectomia (appendicite perforata)
- Trapianto di fegato (epatite acuta fulminante)
- Concentrati di fattore VIII e IX (emofilia)
- Inibitori della colinesterasi nella myastenia gravis
- Alcuni antidoti negli avvelenamenti
- Defibrillatore esterno nell’arresto cardiaco
Problems in testing CAM

• The average size of the overall therapeutic effect associated with CAM is usually modest and the NNT are often high (statistically significant but of debatable clinical relevance)

• Even minor adverse effects would therefore critically disturb the delicate balance of risk and benefit.

Ernst E. J Fam Pract, 2003
Table 1 Examples of techniques used in complementary and alternative medicine

<table>
<thead>
<tr>
<th>Technique</th>
<th>Method</th>
<th>Indication (examples)</th>
<th>Serious risks (examples)</th>
<th>Benefits*</th>
<th>Risk benefit analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acupuncture²</td>
<td>Therapeutic/diagnostic</td>
<td>Chronic pain</td>
<td>Tissue trauma, infections (rare)†</td>
<td>No convincing evidence</td>
<td>Uncertain</td>
</tr>
<tr>
<td>Acupuncture³</td>
<td>Therapeutic/diagnostic</td>
<td>Nausea</td>
<td>Tissue trauma, infections (rare)†</td>
<td>Convincing evidence</td>
<td>Positive</td>
</tr>
<tr>
<td>Aromatherapy⁴</td>
<td>Therapeutic</td>
<td>Various</td>
<td>Allergic reaction, carcinogenic potential in some oils</td>
<td>Good evidence for relaxing effects</td>
<td>Uncertain</td>
</tr>
<tr>
<td>Chelation therapy⁵</td>
<td>Therapeutic</td>
<td>Intermittent claudication</td>
<td>Kidney damage, electrolyte imbalances†</td>
<td>No convincing evidence</td>
<td>Negative</td>
</tr>
<tr>
<td>Chiropractic⁶</td>
<td>Therapeutic/diagnostic</td>
<td>Back pain</td>
<td>Vertebral or carotid artery dissection†</td>
<td>Promising but not convincing evidence for acute or chronic back pain</td>
<td>Uncertain</td>
</tr>
<tr>
<td>Herbalism⁷ ⁸</td>
<td>Therapeutic</td>
<td>(St John’s wort for depression‡)</td>
<td>Increased risk of bleeding, interaction with numerous drugs</td>
<td>Clear evidence that it is superior to placebo</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Ginkgo biloba for intermittent claudication‡)</td>
<td>Increased risk of bleeding, interaction with anticoagulants</td>
<td>Clear evidence that it is superior to placebo</td>
<td>Positive</td>
</tr>
<tr>
<td>Homoeopathy⁹</td>
<td>Therapeutic/diagnostic</td>
<td>Various</td>
<td>No serious direct risks of highly dilute remedies</td>
<td>No clear evidence for clinical effectiveness for any condition</td>
<td>Uncertain</td>
</tr>
<tr>
<td>Iridology¹⁰</td>
<td>Diagnostic</td>
<td>NA (diagnostic method)</td>
<td>False positive or false negative diagnosis</td>
<td>No convincing evidence</td>
<td>Negative</td>
</tr>
<tr>
<td>Massage¹¹</td>
<td>Therapeutic/diagnostic</td>
<td>Back pain</td>
<td>No serious direct risks</td>
<td>No convincing evidence</td>
<td>Uncertain</td>
</tr>
<tr>
<td>Reflexology¹²</td>
<td>Therapeutic/diagnostic</td>
<td>Various</td>
<td>No serious direct risks</td>
<td>No convincing evidence for clinical effectiveness for any condition</td>
<td>Uncertain</td>
</tr>
<tr>
<td>Spiritual healing¹³</td>
<td>Therapeutic/diagnostic</td>
<td>Various</td>
<td>No serious direct risks</td>
<td>No convincing evidence for clinical effectiveness for any condition</td>
<td>Uncertain</td>
</tr>
</tbody>
</table>

*Evidence based on recent systematic reviews or meta-analyses.
†Fatalities have occurred.
‡As examples of one specific herbal remedy.
NA=not applicable

Raschetti R, Menniti-Ippolito F, Forcella E, Bianchi C.

Complementary and alternative medicine in the scientific literature

RESULTS

• During the period 1996-2002, a total of 20,209 articles about CAM were published

• Approximately 50% of CAM articles appeared on journals with no IF.

• The proportion of clinical trials was 7.6% of total CAM articles.

CONCLUSIONS

• We believe there is an urgent need to conduct rigorous research in the field of CAM in order to support, for the need of the public, an evidence-based approach to these therapies.

1. Differenze tra CAM e MC
2. Efficacia delle CAM
3. Rischi delle CAM
4. CAM ed EBM
5. La posizione del GIMBE®
3. Rischi delle CAM

1. Direct harm

- Harm results from a side effect of a CAM
  - Herb-drug interaction
  - Toxicity of herbs
  - Vertebral artery dissection or nerve damage after chiropractic manipulation
  - Needle penetrating the lung during acupuncture

*Kotsirilos V. Aust Fam Physician, 2005*
2. Indirect harm

- Results from the delay of appropriate treatment for a medical condition due to misinformation about unrealistic treatment of a condition.
- Indirect harm is often seen with cancer treatments.

*Kotsirilos V. Aust Fam Physician, 2005*
3. Economic harm

- Many CAMs are marketed directly to the public through advertising and testimonials in the press, the internet, television, and through multi-level marketing.
1. Differenze tra CAM e MC
2. Efficacia delle CAM
3. Rischi delle CAM
4. CAM ed EBM

Complementary medicine and the Cochrane Collaboration

JAMA 1998;280:1628-30
The Cochrane Collaboration

The Complementary Medicine Field is an international group of individuals dedicated to facilitating the production of systematic reviews of randomized clinical trials in topic areas such as acupuncture, massage, chiropractic, herbal medicine, homeopathy and mind-body therapy. The Complementary Medicine Field is coordinated by the University of Maryland Center for Integrative Medicine.

Field Staff

Brian Berman, MD, Field Coordinator (bberman@compmed.umm.edu)

Eric Manheimer, MS, Field Administrator (emanheimer@compmed.umm.edu)

The Center for Integrative Medicine

University of Maryland School of Medicine Kerman Hospital Mansion 2200
193 Cochrane Reviews related to CAM (Issue 2, 2005)

The Cochrane reviews below are available in The Cochrane Library. Abstracts of the reviews can be viewed at no charge at the Collaboration’s website (http://www.cochrane.org/cochrane/reviews).

Cochrane Reviews Related to Complementary and Alternative Medicine (as of Issue 2, 2005):

1. Acetyl-L-carnitine for dementia
2. Acupuncture and electroacupuncture for the treatment of RA
3. Acupuncture for acute stroke
4. Acupuncture for Bell's palsy
5. Acupuncture for chronic asthma
6. Acupuncture for depression
7. Acupuncture for idiopathic headache
8. Acupuncture for induction of labour
9. Acupuncture for lateral elbow pain
10. Acupuncture for low back pain
11. Acupuncture for shoulder pain
12. Acupuncture for smoking cessation
13. Alexander technique for chronic asthma
14. Aloe vera for wound healing
Pubblicazioni secondarie

- ACP Journal Club
- Bandolier
- Evidence-Based Medicine
- Evidence-Based Cardiovascular Medicine
- Evidence-Based Mental Health
- Evidence-Based Nursing
- Evidence-Based Healthcare & Public Health
- Evidence-Based Dentistry
- Evidence-Based Obstetrics and Gynecology
- Evidence-Based Ophthalmology
- Evidence-Based Gastroenterology
- Evidence-Based Complementary and Alternative Medicine
- Journal of Evidence-based Dental Practice
Evidence-based Complementary and Alternative Medicine (eCAM) is an international, peer-reviewed journal that seeks to understand the sources and to encourage rigorous research in this new, yet ancient world of complementary and alternative medicine.

Challenges in systematic reviews of complementary and alternative medicine topics

Vickers AJ

Message to complementary and alternative medicine: evidence is a better friend than power

BMC Complementary and Alternative Medicine 2001;1:1
There are no good reasons to suggest that EBM is incompatible with CAM, or that it works to CAM's disadvantage.

Were the CAM community to reject EBM, its future would be decided in the closed-off back rooms of power.

By placing CAM on an equal footing with conventional medicine - what matters for both is evidence of effectiveness - EBM provides an opportunity for CAM to find an appropriate and just place in health care.

Vickers AJ.
BMC Complementary and Alternative Medicine, 2001
There is no alternative medicine.

There is only scientifically proven, evidence-based medicine supported by solid data or unproven medicine, for which scientific evidence is lacking.

Fontanarosa PB, et al. JAMA, 1998
The Navajo have integrated “unconventional Western medicine” - provided by the Indian Health Service - into their centuriesold conventional health care, which is provided by native healers.

Dalen JE. Arch Intern Med, 1998
5. La posizione del **GIMBE**®

**SI’**

- Favorire l’integrazione tra CM e CAM
- Identificare le problematiche metodologiche - diverse nelle varie tipologie di CAM - che esistono per la valutazione dell’efficacia delle CAM.
- Diffondere la metodologia della ricerca nelle CAM.
- Finanziare la ricerca per valutare l’efficacia e la sicurezza delle CAM.
- Rimborsare le CAM di documentata efficacia.
5. La posizione del GIMBE®

NO

• Diffusione indiscriminata delle CAM
• Pratica delle CAM da parte di professionisti non medici
• Legittimazione delle CAM solo per il fatto che è praticata dai medici.
• Spingere i pazienti ad abbandonare CM di provata efficacia in favore di CAM dall’incerto profilo beneficio-rischio.