Complementary and Alternative Medicine (CAM)

Trick or Treatment?

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Background

• Large proportions of the general population use CAM

• For patient populations, the figures are much higher

• In the UK we spend ~ £1.6 billion on CAM each year (>90% out of our own pocket)

• Even the most fundamental questions remain unanswered

Trick or Treatment?

- How can we find out?
• Plausibility
• The test of time
• Ask the patient
• Do the research
- Acupuncture
- Chiropractic
- Homeopathy
- Reflexology

Yin Yang
“95 % of all diseases are caused by subluxations”

Daniel David Palmer

“like cures like”

Samuel Hahnemann
1755 - 1843
Reflexology foot map
But ...

... implausible does not always mean false!

1) Some implausibilities turned out to be true (and some plausibilities to be false)

2) A theory can be wrong but the treatment might still be effective

So ...

... implausibility can be an indicator but not a proof
The test of time:

“What has been around for hundreds of years must be OK”
“Experience is the name we give to our mistakes”

(Oscar Wilde)
Ask the patient

Hierarchy of evidence: the patient’s perspective

- Gut feelings
- Trial and error
- Anecdotal evidence
- Popular press
- Scientific evidence

Verhoef M. 11th Annual Symposium on Complementary Healthcare
Problem: the complexity of the therapeutic response

Assumption: PTR was caused by the treatment
Assumption: PTR was caused by the treatment

...a somewhat naïve idea

The perceived therapeutic effect

- Specific effect of therapy
- True placebo-effect
- Clinician-patient interaction
- Natural history
- Regression towards the mean
- Social desirability
- Concomittent therapies
- Other context effects
Do the research

The man who first suggested a controlled clinical trial

“Let us take.. 200 or 500 poor people that have fever... Let us divide them into two halves, let us cast lots... I will cure them without bloodletting... but you do as ye know... We shall see how many funerals we both shall have.”

Jan Bapstist van Helmont 1662
... 147 years later...

Hamilton's trial of bloodletting (1809)

<table>
<thead>
<tr>
<th>Sample:</th>
<th>366 soldiers with various conditions</th>
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<tbody>
<tr>
<td>Method:</td>
<td>Alternating allocation to 3 groups.</td>
</tr>
<tr>
<td></td>
<td>A) Treated by Hamilton without blood letting</td>
</tr>
<tr>
<td></td>
<td>B) Treated by Anderson without bloodletting</td>
</tr>
<tr>
<td></td>
<td>C) Treated with bloodletting.</td>
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<tr>
<td>Result:</td>
<td>Death rates</td>
</tr>
<tr>
<td></td>
<td>A) 4</td>
</tr>
<tr>
<td></td>
<td>B) 2</td>
</tr>
<tr>
<td></td>
<td>C) 35</td>
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### Scurvy in the 18th century

- Killed many 100 thousand sailors
- Cause was unknown
- Many treatments had been tried:
  - blood letting
  - mercury
  - saltwater
  - vinegar
  - sulphuric acid
  - hydrochloric acid
  - Moselle Wine
  - burying patient in sand
  - hard labour
The first controlled clinical trial

Date: 20 May 1747
Primary investigator: Dr. James Lind
Condition: scurvy (purid gums, lassitude with weakness of their knees)

Design:

N=12

- 2 sailors: a quart of cider
- 2 sailors: 3x25 drops of elixir of vitriol
- 2 sailors: 3x2 spoonful of vinegar
- 2 sailors: ½ pint of seawater
- 2 sailors: paste of garlic, mustard, radish root and gum myrrh
- 2 sailors: 2 oranges and a lemon

Treatment period: 6 days
## Acupuncture for knee osteoarthritis

| **Design:** | RCT, sham-controlled |
| **Sample:** | 570 patients |
| **Intervention:** | A) Regular acupuncture or B) sham-acupuncture or C) education |
| **Primary outcome measure:** | Pain |
| **Main results:** | A) Improved pain significantly better than B |

Imagine a body of evidence (e.g. 100 RCTs)

50 suggest efficacy

50 fail to suggest efficacy
suggest efficacy

fail to suggest efficacy
Such an approach is called a “Systematic Review”

Two conditions are evidence-based
- Some forms of pain
- Nausea/vomiting
"95% of all diseases are caused by displaced vertabrae, the remainder by subluxations of other joints"

DD Palmer
Chiropractic: non-spinal conditions

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<td>Infant Colic</td>
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<td>Fibromyalgia</td>
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<td>CTS</td>
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Organisations promoting chiropractic for asthma (Oct-Nov 2008)

- American Chiropractic Association
- British Chiropractic Association
- Canadian Chiropractic Association
- Chiropractic Patients Association (US)
- International Chiropractors Association
Risks of chiropractic spinal manipulation

~ 50% mild to moderate adverse effects (not disputed)

+ Several hundred cases of severe complications (hotly disputed)
More good than harm?

![Diagram showing balance between harm and benefit]

HEAL
The Homoeopathic Nurse Review

PC2/2009/Oct/CAM ToT V5 - 51

PC2/2009/Oct/CAM ToT V5 - 52
• Like cures like

• Less is more

The homeopathic dose

100 %
90 %
80 %
70 %
60 %
50 %
40 %
30 %
20 %
10 %
0 %

D0 D1 D2 D3 D4

"potency"
The results... do not suggest that homeopathic arnica has an advantage over placebo
The results... do not suggest that homeopathic arnica has an advantage over placebo

Later confirmed by two independent systematic reviews of all 8 RCTs on the subject

But this is not individualised homeopathy!
...no evidence that adjunctive homeopathic remedies... are superior to placebo...
...but this is just one of many RCTs...

(remember: distrust the “cherry pickers”)

PC2/2009/Oct/CAM ToT V5 - 61
...the best evidence... does not warrant positive recommendations for its [homeopathy's] use in clinical practice.

Harm?
More good than harm?
So far so good?
St John’s wort

© 1995 by Gustav Fischer Verlag, Stuttgart - Jena - New York

Review

St. John’s Wort, an anti-depressant?
A systematic, criteria-based review

E. ERNST
Centre for Complementary Health Studies and Postgraduate Medical School, University of Exeter, 21 Victoria Park Road, Exeter EX4 1LE, UK

Summary

The aim of this review was to assess controlled clinical trials of Hypericum as a treatment for depression. A systematic, combined computer and hand search revealed fourteen studies conducted against placebo and four against standard medication. Eight of the former and three of the latter met the predetermined methodological inclusion criteria and were admitted for analysis. The cumulative data shows that Hypericum is superior to placebo in alleviating symptoms of depression as quantified by the Hamilton Scale. It also seems equally effective as standard medication; the frequency of adverse drug reactions shows a clear advantage of the herbal over synthetic anti-depressants. It is concluded that Hypericum is a safe and effective symptomatic treatment for various forms of depressions.

Key words: Hypericum, St. John’s Wort, depression.
“...Hypericum is a safe and effective symptomatic treatment for... depression.”

Meanwhile: ~ 40 RCTs
~12 systematic reviews
"Looks like he died of natural causes."

Second thoughts about safety of St John's wort

St John's wort (Hypericum perforatum) has been phenomenally successful as a herbal antidepressant. In the USA sales increased by 2800% in 1 year,7 and in Europe total sales figures were around US$6 billion in 1996.8 There are few doubts about the efficacy of hypericum extracts. In 1996, a meta-analysis of 15 placebo-controlled trials reported an odds ratio of 2.7 (95% CI 1.8–4.0) in favour of hypericum extracts, and six equivalence trials suggested that hypericum extracts are as effective as conventional antidepressants.9 The mode of action for hypericum extracts is thought to be similar to that of conventional serotonin-reuptake inhibitors; in various biological depression models hypericum extracts weakly inhibit the activities of A and B monoamine oxidases but strongly inhibit serotonin reuptake into the synapse.4

The meta-analysis4 and another comprehensive analysis7 strongly implied that hypericum extracts are associated with substantially fewer adverse effects than synthetic antidepressants. However, their safety has recently been questioned. Several reports have raised the
**SJW - organ transplantation**

**Design:** systematic review

**Sample:** 76 case reports of SJW-cyclosporine interactions after organ transplant

**Results:**
- no doubt about causality
- several life-threatening situations
- high costs

Ernst Arch Surgery 2002, 137: 316

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**Reflexology foot map**

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PC2/2009/Ocd/CAM ToT V5 - 75
## Reflexology

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<th><strong>Design:</strong></th>
<th>systematic review</th>
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<td><strong>Sample:</strong></td>
<td>18 Randomised clinical trials</td>
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</table>
| **Results:** | • Trials were in 13 different areas  
• Independent replications were rare  
• Methodological quality was mostly poor  
• 5 studies were positive, 1 were negative |
| **Conclusion** | “The best evidence… does not demonstrate… that reflexology is an effective treatment for any medical condition.” |

Ernst *MJA* 2009, 191: 263
# Massage therapy for cancer palliation

**Design:** systematic review

**Sample:** 14 RCTs

**Results:** Massage therapy improves the following symptoms
- Pain
- Nausea
- Anxiety
- Depression
- Anger
- Stress
- Fatigue

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**Conclusion**