

Comprehensive Cancer Care At Sir Charles Gairdner Hospital: The Solariscare Foundation

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AACB/AIMS Annual Scientific Meeting, October 2010



Talk Overview

Cancer- the burden of disease

**Changes in cancer treatment and
the emergence of complementary medicine**

The SolarisCare Experience



SCEPTICS

"I refer ... my complicated patients to SCGH.

I have recently found my patients being confronted with alternative medical approaches... quackery in various guises... a complete denial of what the medical school does and certainly should stand for... no supportive evidence, when medical students are encouraged to seek evidence based medicine."

Letter from General Surgeon 2002



Cancer in Australia 2005

Over 100,000 new cases of cancer diagnosed.

Projected to grow by over 3,000 extra cases p.a. in 2006–2010.

Over 39,000 deaths from cancer in Australia.

The risk of being diagnosed with cancer before age 75 was 1 in 3.

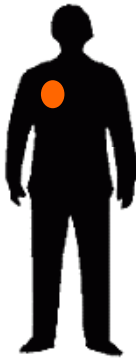
End 2004: 654,977 living persons diagnosed with cancer

(3.2% of the population).

AIHW (Australian Institute of Health and Welfare) & AACR (Australasian Association of Cancer Registries) 2008. Cancer in Australia: an overview, 2008. Cancer series no. 46. Cat. no. CAN 42. Canberra: AIHW.

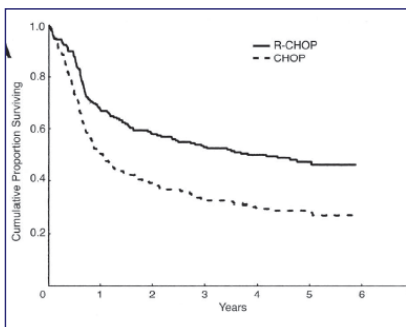


Mainstream View of Cancer Treatment



New cancer treatment paradigms

Targeted Therapies: Glivec (Imatinib)



Immunotherapy: Rituximab

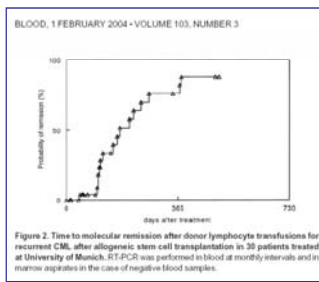


Figure 2. Time to molecular remission after donor lymphocyte transfusions for recurrent CLL after allogeneic stem cell transplantation in 30 patients treated at University of Munich. RT-PCR was performed in blood at monthly intervals and in marrow aspirates in the case of negative blood samples.

Cellular therapies: DLI

1. Chronic myeloid leukaemia: the evolution of gene-targeted therapy. Joske D. Med J Aust 2008.
2. Feugier et al. JCO 2005



CAM Use By Cancer Patients

AUSTRALIA 51%

used 1 or more non-medically prescribed medicine.

57.2% of users did not tell their doctor.

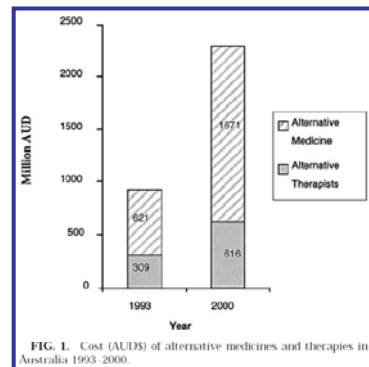
Overall cost 4 x that of public contribution to all pharmaceuticals.

EUROPE 36%

Review of 26 surveys in 13 countries (Molassiotis 2003)

US 91%

including prayer, relaxation and exercise (Yates 2005)



MacLennan, Wilson, Taylor. Prev. Med. 2000, 35: 166-173.



Rising CAM use and acceptance

In Australia expenditure on CAM in 2004 was \$1.8 billion.

26.5% had visited a CAM practitioner or taken natural supplements.

CAM use by GPs: 30-40% practise a complementary therapy.

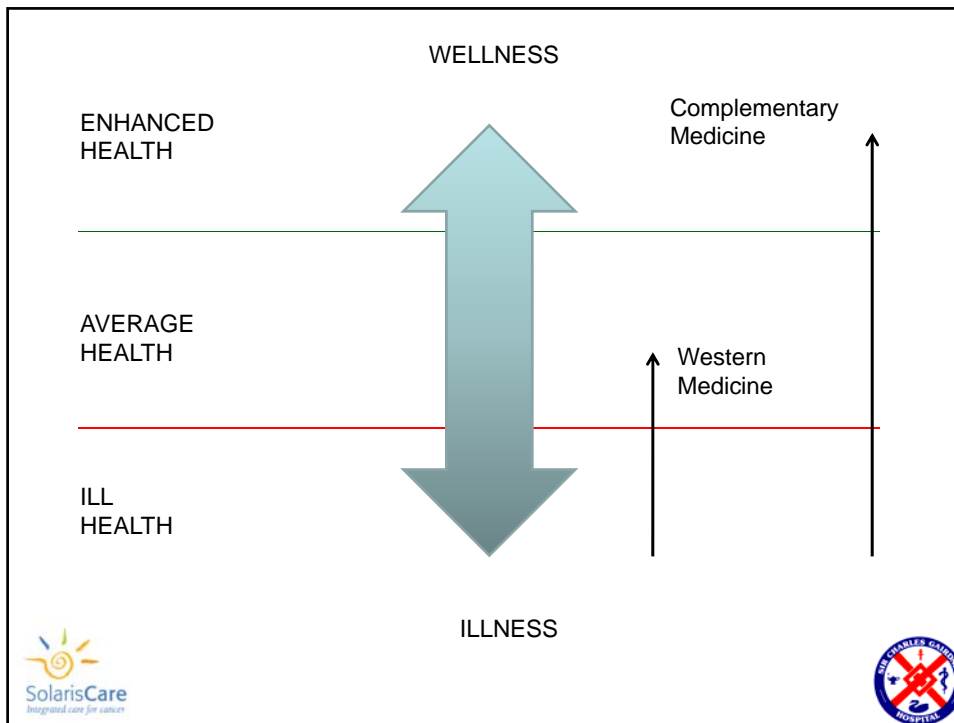
80% of GPs think acupuncture, hypnosis, meditation are appropriate.

CAM is important because it is popular!

Two health systems operating in parallel and interaction is minimal.

MacLennan et al 2006; Cohen et al 2005; Braun & Cohen 2010.





Complementary or Alternative Medicine (CAM)?

Alternative medicine

Health-related activity - diagnosis, treatment, prevention – used **in place of** mainstream medicine.

Complementary medicine

Health-related activity used **together with** mainstream medicine.

NOTE: complementary medicines versus complementary therapies!

Integrative medicine

combines mainstream and complementary medical therapies for which there is high-quality medical evidence.



A Clash of Cultures

Mainstream medicine

Bio-technological
Hypothesis-testing
Population/ statistics-based
Reductionist
Quantitative outcomes

Treatment is best defined by disease characteristics, not the individual.

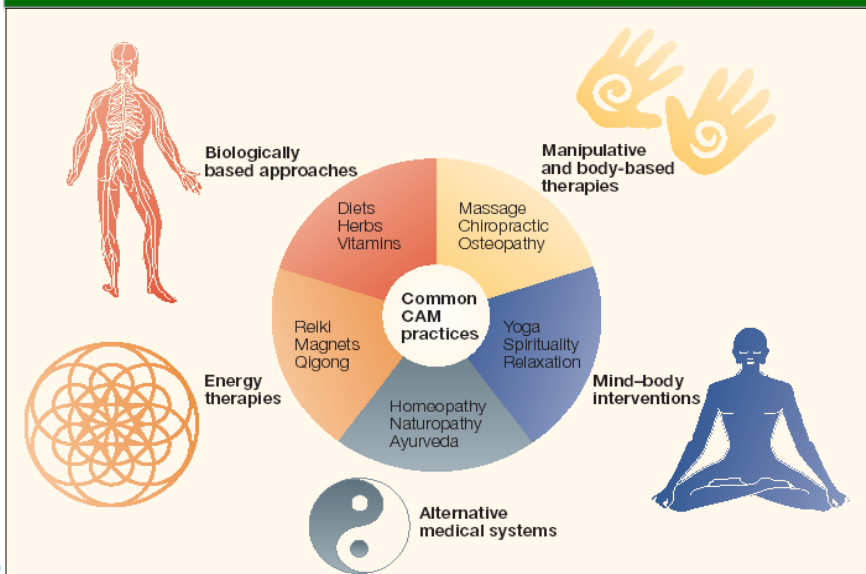
Complementary Medicine

Holistic
Qualitative
Individualised
Open-ended
Explorative

The individual has an energy that can be channelled to improve healing



The five domains of CAM



Goldrosen M, Straus S. *Nature Rev. Immunol.* 2004, 4:912-921.



How good are complementary medicines for cancer?

In vitro: cancer cells are more susceptible to apoptosis induced by anti-oxidants.

Individuals with diets high in anti-oxidants have reduced cancer risk.

Allium sp. vegetables (e.g. onions), St John's Wort, Green tea, phyto-oestrogens, – some evidence of preventative effect (European J Cancer, 2003 Ernst, review).

A chinese herb, *astragalus*, may reduce chemotherapy side effects (Taixiang et al 2005, Cochrane Review of 4 RCTs).

Coenzyme Q10 may reduce anthracycline cardiotoxicity. Many other natural substances show some evidence of reducing chemotherapy side effects.

No trials yet support cures. A few case reports. Certainly laetrile, shark cartilage, and homeopathy are ineffective.



IV Vitamin C?

Cameron & Pauling (1976): 10 g/day Vit C IVI for 10 days, followed by oral supplements to 100 cancer patients and compared the survival from “date of untreatability” of the cancer, to 1000 similar control patients.

The slope of the mortality curve was one third that of the controls.



Two RCTs (n=100 and n=123) 10 g p.o. Vit C and found no survival advantage.

Moertel et al, Mayo Clinic (New Engl J Med 1985)

RCT in advanced non-small cell lung cancer (Pathak et al 2005).

Randomly assigned to chemo or chemo + anti-oxidants.

Vit C 6100mg + Vit E 1050 mg + beta-carotene 60 mg daily.

No significant differences in survival or toxicities found.

(n=136; ORR 37%. The only two CRs were in the supplement group!)

Note: IV does achieve much higher plasma levels; time to re-evaluate?



Toxicity of some common oral CAM preparations

CAM	Indication	Toxicity
St John's wort	Depression	Nausea, hypersensitivity reactions
Ephedra alkaloids	Weight reduction	Hypertension, tachycardia, stroke, seizures
Kava	Anxiety	Yellow discoloration of skin/nails, hepatic dysfunction, stupor, visual disturbances, dizziness
Echinacea	Respiratory infections	Hypersensitivity reactions (including anaphylaxis)
Saw palmetto	Benign prostatic hypertrophy	Diarrhea, constipation, headache, hypertension, nausea, urinary retention
Ginseng	Sedative	Diarrhea, headache, hypertension, insomnia, nausea
Ginkgo	Dementia	Emesis, headache
Green tea	Prostate cancer	Emesis, insomnia, diarrhea, confusion
Hydrazine sulfate	Appetite stimulant	Hepatorenal failure
Shark cartilage	Cancer	Emesis, constipation, hepatitis
Laetrile	Cancer	Emesis, headache, dizziness, obtundation, dermatitis
Antineoplastons	Gliomas	Somnolence, confusion



Markman, JCO, 2002

See also De Smet, *New Engl J Med* 2002;347:2046-2056



How bad are complementary medicines for cancer?

1. Bad when used as alternative to effective mainstream treatment.
2. Risk of acute adverse reactions and cumulative toxicity.
3. Issue of poor disclosure by patients of what they are taking.
4. Possible reduced efficacy of chemotherapy from interaction with herbs.
5. Possible increased toxicity.

Cochrane review

- non-cancer-related
- sixty-seven randomised trials with 232,550 participants
 - vitamin C and selenium appeared safe
- vitamin A, beta-carotene, vitamin E may be associated with increased mortality.

Bjelakovic et al. Cochrane Database Syst Rev, 2008.

Long term selenium use has been linked to increased risk of type II diabetes but appeared to reduce radiation-associated diarrhoea seen with treatment of gynaecological cancer.

Stranges et al. Ann Intern Med 2007.



How good are complementary therapies?

High level (level II, randomised controlled trial evidence)

- Massage reduces anxiety
- Music therapy improves mood
- Acupuncture reduces nausea
- Mixed evidence for psychological interventions:
 - counselling
 - self-imagery
 - hypnosis



Joske D, Rao A, Kristjanson L. Critical review of Complementary Therapies in Haemato-Oncology. *Int Med J* 2006.

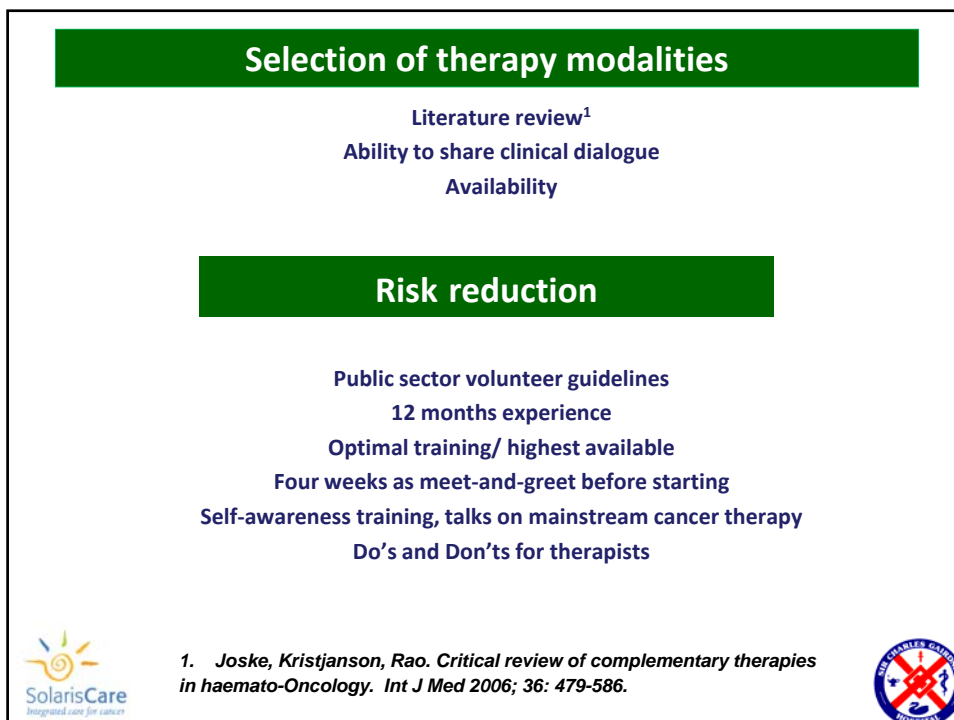
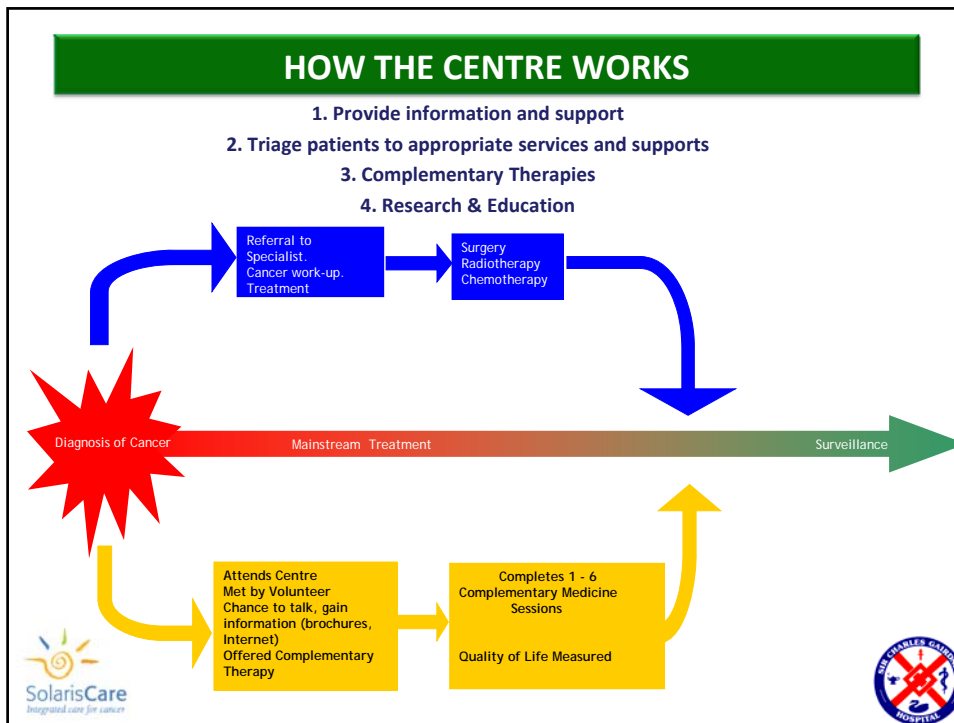


SolarisCare Foundation

Peters & Brownes Cancer Support Centre 2001 at SCGH
Charitable Foundation 2006.
Chemo Club 2006.
Second Centre - St John of God Hospital Subiaco 2008
Third Centre - Bunbury Regional WA 2010

5 staff
1.2 post-doctoral researchers
150 volunteers: meet-and-greet, therapists.
Database of 1800 users of CAM 2002-2008.





Demographics (n = 1244*)

77% female

82% outpatients

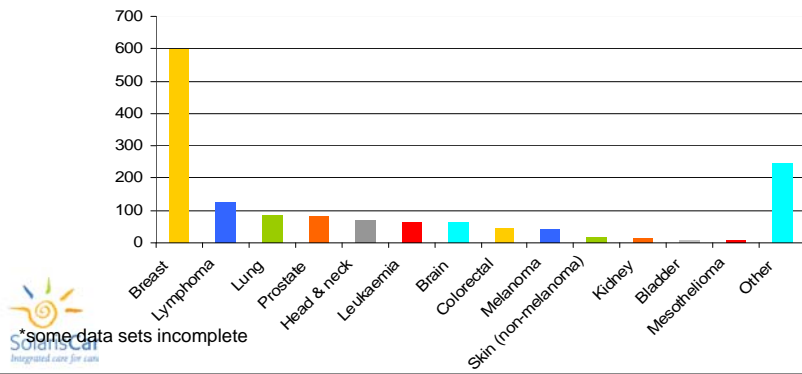
Mean age 55 years (54 for women, 59 for men)

27% reported known metastases

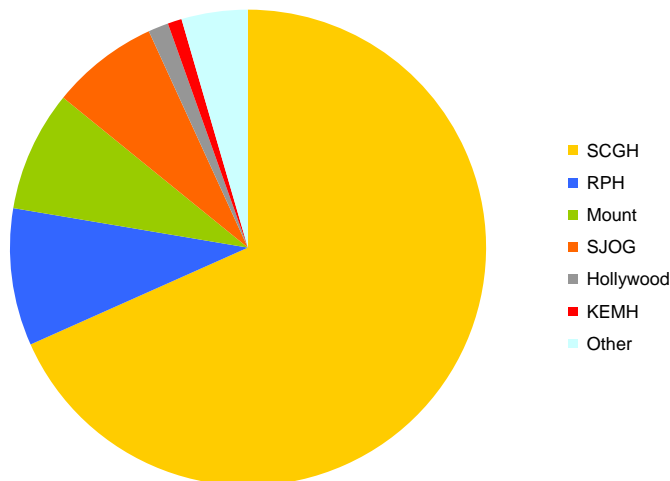
12.3% were undergoing concurrent chemotherapy; 17% radiotherapy; 28% surgery

45% were women with breast cancer

Cancer Type



Primary Hospital (n = 1244)

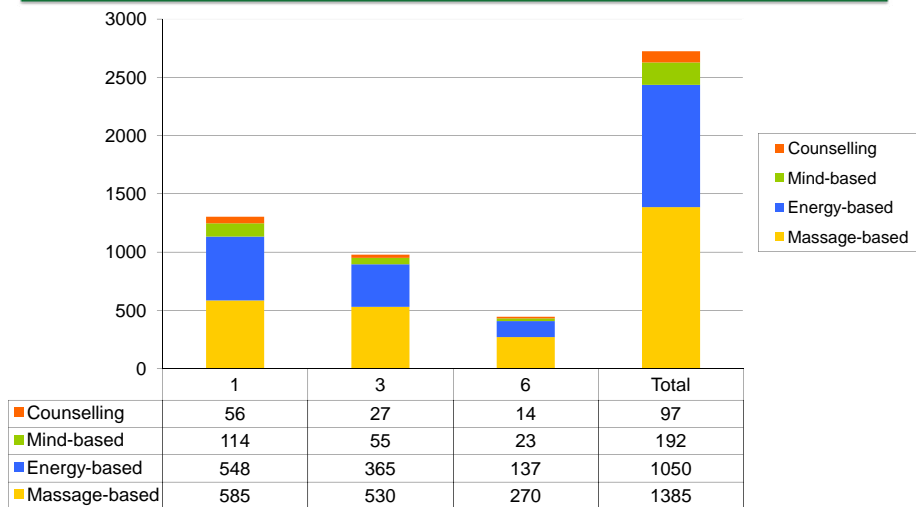


68% SCGH

78% Public hospitals



Therapy choices (n = 2724)



Likelihood ratio $\chi^2(6) = 51.2766$ ($p < 0.001$)
 there is a significant change in the mix of therapy over time to
 more message-based and less-energy based therapies.



Symptom distress and quality of life measurements

February 2002-November 2008, n = 1800 , including 1288 cancer patients, 400 carers

1. Initial consultation form

age, cancer type, metastases, co-morbidities, mainstream treatment

2. SDS and QOL scales before and after sessions 1, 3 and 6

7-point Edmonton Symptom Distress Scale

pain, fatigue, nausea, bowels, breathing, appetite, sleep

7-point psychological Quality of Life scale

disempowered, depressed, anxious, frustrated, confused, not coping, worried

Ten point scale for each item

Adapted from palliative care research

Previously validated in cancer cohorts

Results assembled on database

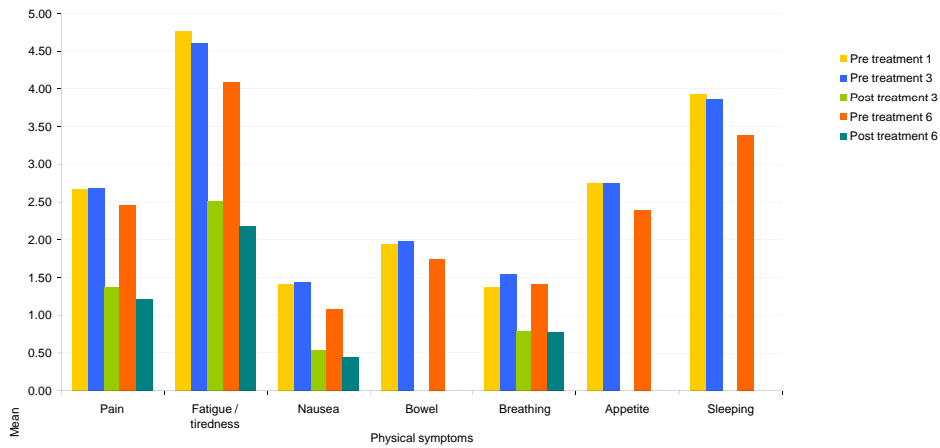
Biostatistical analysis

Reliability confirmed

Allowance for "missingness"



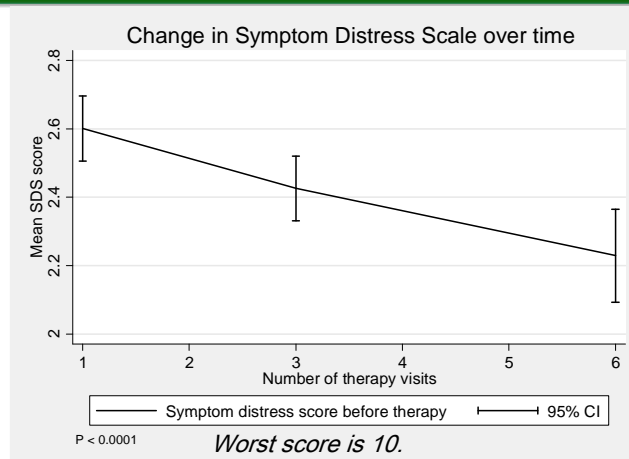
Symptom distress scale results



Mean of SAS scores for items at each assessment for clients with cancer



Reduction in symptom distress



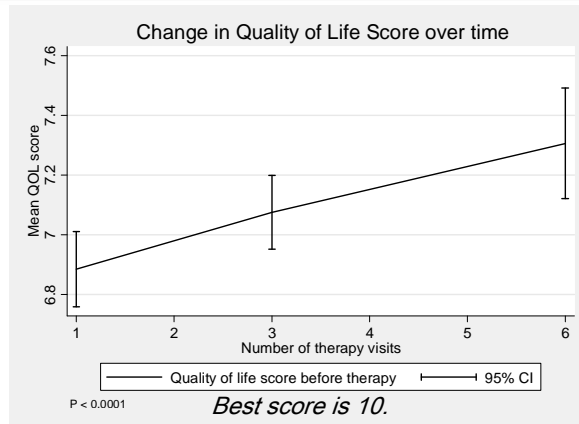
There is a reduction in symptom distress over time.

This change is statistically significant and linear ($p < 0.001$).

14% reduction in symptom distress over 6 treatments.



Improved quality of life



QOL is estimated to improve 8.2% over baseline per session from baseline (using random effects model).

*This is a large improvement and is probably **clinically significant***



Allowing for missingness

Essentially unchanged results were found after re-analysing using:

1. predictors of attrition
2. Heckman method (Sale et al, 2004)
3. a clustered linear regression model
4. multiple imputation methods (Rubin and Little)
5. maximum likelihood estimation (multivariate random effects models; Little, 1995)

Adverse events

Essentially none

Over-vigorous neck massage of a staff member
Needle-stick injury with a clean acupuncture needle



Possible explanations

Complementary therapy

Placebo (Listener or volunteer effect)

Mainstream care

Interaction between these



Conclusions

1. **Cancer is a common health problem with a large burden of disease in Australia.**
2. **Mainstream cancer treatment approaches are expanding, with the benefits of molecular biology coming through to the bedside.**
3. **At the same time, CAM practices may have much to offer alongside orthodox medicine to improve quality of life for cancer patients.**

Acknowledgements

SCGH Hospital; SolarisCare Board and Patron, Justin Langer; Liz Lobb, Anna Petterson, Linda Kristjanson, Aurora Popescu, Hussein Muttiwala, David Oliver, David Edwards.

Chemo Club: Steve Smith at Aspire Fitness, Claremont.



Difficulties with research into CAM

Adequate placebos can be impossible

Nature of the workforce

Trials of complex alternative health systems more difficult than most clinical trials

Cancer is an emotional area and this can hinder recruitment

Funding

OUTLOOK IMPROVING

Research innovations:

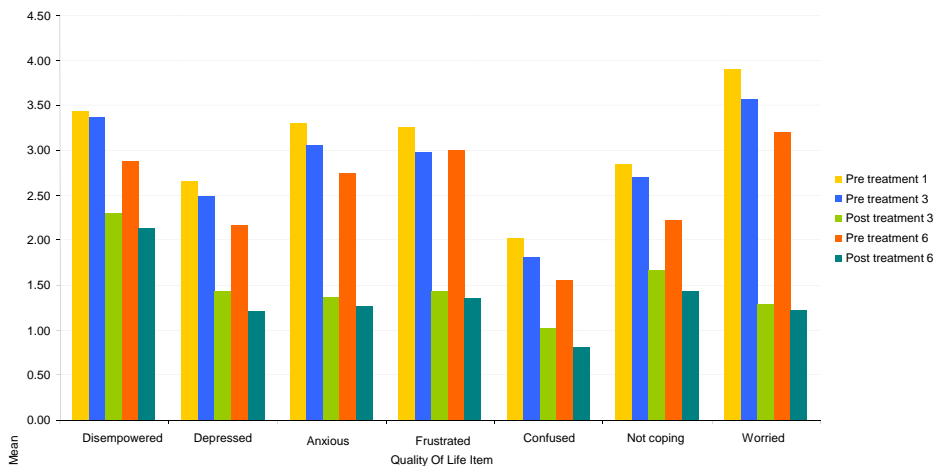
Whole Systems Research; Best Case Registry; new outcomes measures

Establishment in Australia of NICM in NSW 2007

Rounds of funding for CAM Research by NHMRC and HNCCAM



Quality of life scores



Mean scores of the seven QOL items at each assessment for clients with cancer



Improved quality of life: deeper analysis

Lower baseline QOL score correlated with

- Female gender ($p=0.001$)
- Inpatient status ($p<0.001$)

SDS scores showed different baseline scores between cancer types
(worse symptoms for lung cancer and leukemias)
But improved equally

QOL scores improved equally between cancer types

Highly significant correlation between SDS and QOL



Selection of therapy modalities

Literature review¹

Ability to share clinical dialogue

Availability

Risk reduction

Public sector volunteer guidelines

12 months experience

Optimal training/ highest available

Four weeks as meet-and-greet before starting

Self-awareness training, talks on mainstream cancer therapy

DO's:

Message away from disease sites.
Allow follow up for private therapy.
Refer on.
Offer follow up privately.

DON'Ts

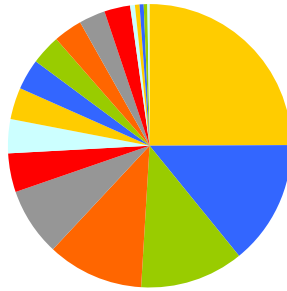
Never practice outside area of expertise.
Never influence against mainstream therapy.
Never claim "accreditation" with SCGH.
Never claim you can cure the patient.



1. Joske, Kristjanson, Rao. Critical review of complementary therapies in haemato-Oncology. *Int J Med* 2006; 36: 479-586.



Therapies administered



- Reiki
- Reflexology
- Aromatherapy
- Pranic healing
- Bowen therapy
- Chi breathing & Chi meditation
- Acupuncture
- Healing touch
- Counselling
- Cranio-sacral therapy
- Kinesiology
- Relaxation massage
- Beauty therapy
- Creative art therapy
- Breath for health
- Creative visualisation
- Tai Chi
- Qi Gong
- Sound & music therapy

