Cancer, Hypnosis and Host Defences: Current Status and Future Prospects.

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HARTLAND’S
MEDICAL & DENTAL
HYPNOSIS

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Third Edition

Bailièere Tindall
LONDON PHILADELPHIA TORONTO SYDNEY TOKYO
There are over 250 types of cancer.
At least one in every three people in the UK will develop cancer.
One in every four will die from the disease.
Recent Advances

- 70% of children now survive a cancer diagnosis.
- Deaths from cancer down by 15% in the last 10 years.
- Significant progress in molecular biology.
Cancer Priorities

- Improve outcomes.
- Reduce inequalities.
- Build for the future through investment in the workforce and research infrastructure.
- Ensure people with cancer get the right professional support and care as well as the best treatments.

Prof. M Richards
47% of patients with cancer develop a psychological problem (Derogatis et al, 1983).

25%-33% of women with breast cancer develop clinically significant depression, anxiety and/or sexual problems (Maguire et al, 1980).
Prevalence of Psychological Morbidity: Current

- Of 269 women with early breast cancer, 49.6% were clinically anxious and 37.2% were clinically depressed in the first 3 months (PSE) (Hall et al, 1999).

- Of 2,297 patients with cancer at OP clinics in 34 cancer centres in the UK, 36% were GHQ-12 positive (Fallowfield et al, 2001).

- Of 987 patients with newly diagnosed inoperable lung cancer, 33% had clinically significant depression, which in many cases was persistent (Hopwood and Stephens, 2000).
Hypnosis and Cancer

- Adjustment to the diagnosis/Q of L
- Distress from medical procedures
- Pain
- Chemotherapy side effects
- Host defences
- Survival

Chemotherapy Side -Effects
General Introduction

- Nausea
- Vomiting
- Treatment-related anxiety
Risk Factors

- Under 50
- Type of chemotherapy
- Length of chemotherapy
- Inadequate antiemetic medication
- History of travel sickness
- Alcohol-induced vomiting
- Anxious
- Depressed
Pavlov’s Laboratory

Don’t ring the bell
Miss B

- Aged 25 years
- Business executive
- Hodgkin’s disease Stage IIIB
- MVPP
- Early and late onset side effects
- Refusing further chemotherapy
Miss B

- Relaxation
- Suggestion
- Nausea Management Training
- ‘Ego strengthening’
Miss B

- Completed chemotherapy
- No further anticipatory or late onset vomiting
- Married, alive, children
Preliminary Study

- 7 males: 11 females
- Aged 9-64 years
- All had severe side effects
- Various diagnoses:
  - Lymphoma - 6
  - Advanced Ca breast - 5
  - Teratoma - 3
  - Other - 4
Assessment

- Haematologist’s observations
- Patient’s report
- Nurse’s observations
- Case notes
Results

All 18 patients completed their prescribed course of chemotherapy.
## Results

<table>
<thead>
<tr>
<th></th>
<th>Eliminated</th>
<th>Improved</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early nausea</td>
<td>3</td>
<td>12</td>
<td>88%</td>
</tr>
<tr>
<td>Early vomiting</td>
<td>7</td>
<td>5</td>
<td>75%</td>
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</tbody>
</table>

## Results

<table>
<thead>
<tr>
<th>Condition</th>
<th>Eliminated</th>
<th>Improved</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Late nausea</td>
<td>0</td>
<td>10</td>
<td>55%</td>
</tr>
<tr>
<td>Late vomiting</td>
<td>0</td>
<td>6</td>
<td>33%</td>
</tr>
</tbody>
</table>

Prospective Randomised Trial

To evaluate the effects of relaxation with, or without, hypnotherapy, on chemotherapy side effects.
Patients

- 69 patients with HD, NHL or Teratoma
- No contraindications to hypnotherapy
- Willing to attend at least twice
Interventions

- Training in progressive muscular relaxation and cue controlled relaxation by audio recordings.
- 1-6 sessions of hypnotherapy: direct suggestion, nausea management training, ‘ego strengthening’.
Results

- Very low incidence of side effects during first 3 cycles (early nausea <2% at cycle 3)
- Intervention prophylactic
- Hypnosis reduced anxiety
- Relaxation reduced nausea
Conclusions

- There was a very low incidence of side effects in all three groups.
- Hypnotherapy and relaxation are beneficial for patients receiving cytotoxic chemotherapy.
Do relaxation and hypnotherapy improve survival in patients with HD and NHL?
Long Term Follow Up

Median time from diagnosis to follow up was 13 years 5 months (range 11y 10 m - 14 y 11 m).
Analysis

- **Univariate analysis** using Log-Rank Test and Kaplan-Meier Survival Curves.
- **Multivariate analysis** using the Cox Proportional Hazards Model.
<table>
<thead>
<tr>
<th></th>
<th>Number Alive</th>
<th>Median Survival</th>
<th>Mean (SE) Survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>10/27 (37%)</td>
<td>74 months</td>
<td>98 months (15)</td>
</tr>
<tr>
<td>RT+/-HT</td>
<td>18/36 (50%)</td>
<td>115 months</td>
<td>121 months (13)</td>
</tr>
</tbody>
</table>

Walker et al., 2000, 2003
# Univariate Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>P Value</th>
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</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.0004</td>
</tr>
<tr>
<td>Stage</td>
<td>0.0008</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>0.009</td>
</tr>
<tr>
<td>Performance status</td>
<td>0.06</td>
</tr>
<tr>
<td>Grade</td>
<td>0.55</td>
</tr>
<tr>
<td>Social conformity (L)</td>
<td>0.02</td>
</tr>
<tr>
<td>HADS Depression</td>
<td>0.01</td>
</tr>
<tr>
<td>Social Class</td>
<td>0.59</td>
</tr>
<tr>
<td>Intervention</td>
<td>0.21</td>
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</tbody>
</table>
Intervention and Survival

Survival Probability

Survival (months)

Control

RT + HT
Cox proportional hazards: simultaneous entry

<table>
<thead>
<tr>
<th>Variable</th>
<th>P Value</th>
<th>Exp&lt;sup&gt;b&lt;/sup&gt;</th>
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</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>0.046</td>
<td>2.1</td>
</tr>
<tr>
<td>Stage</td>
<td>0.001</td>
<td>3.8</td>
</tr>
<tr>
<td>HADS Depression</td>
<td>0.0002</td>
<td>7.3</td>
</tr>
<tr>
<td>Social Conformity (L)</td>
<td>0.002</td>
<td>2.1</td>
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</table>
Social Conformity and Survival

- **L=0-4**: $p=0.81$
- **L=5-6**: $p=0.15$
- **L=>6**: $p=0.0001$

Log rank=4.88, $p<0.03$
Summary

- Overall, the interventions prolonged survival.
- Social conformity, depression and stage were independent prognostic factors for survival.
- Social conformity and the interventions interacted.
**Psychosocial Interventions and Survival: Randomised Trials**

**Positive findings**

<table>
<thead>
<tr>
<th>Study</th>
<th>Conditions</th>
</tr>
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<tbody>
<tr>
<td>Spiegel <em>et al</em>, 1989</td>
<td>Breast Cancer</td>
</tr>
<tr>
<td>Fawzy <em>et al</em>, 1993</td>
<td>Malignant Melanoma</td>
</tr>
<tr>
<td>Richardson <em>et al</em>, 1990</td>
<td>Haematological Malignancies</td>
</tr>
<tr>
<td>Kuchler <em>et al</em>, 1999</td>
<td>Various</td>
</tr>
</tbody>
</table>
Psychosocial Interventions and Survival: Randomised Trials

Negative findings

- Linn et al., 1982
- Ilnyckyj et al., 1994.
- Cunningham et al., 1998
- Edelman et al., 1999
- Walker et al., 2002
- Goodwin et al., 2001

Mixed (end stage)
Mixed (mainly stage I)
Metastatic breast
Metastatic breast
Locally advanced breast
Metastatic breast

Anderson and Walker, 2002
Factors Affecting Outcome

PERSONALITY

BIOLOGICAL ASPECTS (i) (P)
Mood disturbance (i) (P)

COGNITIVE ASPECTS (P)
Perceived consequences
Coping styles
Perceived consequences

BEHAVIOURAL ASPECTS (i) (P)
Compliance
Lifestyle changes
Relationships with medical staff
Complementary therapies

(i) Evidence of immunological correlates
(P) Psychological interventions possible

Anderson and Walker, 2001
Psychoneuroimmunology of Cancer
'There is at bottom only one genuinely scientific treatment for all diseases, and that is to stimulate the phagocytes. Stimulate the phagocytes! Drugs are a delusion.'

*The Doctor's Dilemma, 1906*
Effects of Brain on Host Defences

Autonomic nervous system (SAM) and endocrine system (HPA)

Host defences
Stress-Induced Immunosuppression

- Bereavement
- Divorce and separation
- Caregivers of spouse with Alzheimer’s disease
- Academic stress
Host Defences and Cancer

- Animal studies
- AIDS
- Receptors
- Immunotherapy
- Transplantation

Antitumour Mechanisms *in vivo*

Natural Killer Cells
Malignant melanoma
- Prospective randomised controlled trial
- Psycho-educational intervention for 6 weeks

Fawzy et al, 1995
Arch Gen Psychiat, 52, 100-113
Reduced distress
Enhanced coping
Increased % LGL
Increased %NK cells (CD16+ and CD56+) and NKCA
Reduction in CD 4+ ($T_H$)
Independent prognostic factors and survival (5-6 yrs)

Arch Gen Psychiat, 52, 100-113

**Recurrence**
- Breslow depth
- Total mood disturbance
- Baseline coping
- Baseline NKCA
- Intervention

**Survival**
- Breslow depth
- Total mood disturbance
- Baseline coping
- Change in coping
- Intervention
Relationship between psychosocial variables and host defences

**Lung cancer**
- CECS total: LAKCA - .32, NKCA, PHA
- Social support: + .43

**Early Breast Cancer**
- HADS depression: - .31
- Social support: + .42

**Healthy Volunteers**
- HADS depression: - .45
- EPQ L: - .40
Relaxation and Guided Imagery: Background

- Diagnosis and treatment stressful and high levels of morbidity reported.
- Stress can be immunosuppressive and immunosuppression may affect clinical outcome.
- Psychosocial interventions can offset stress-induced immunosuppression.
Relaxation and Guided Imagery: Background

Need to develop ways of reducing stress and enhancing coping following diagnosis.
Relaxation and Guided Imagery: Aims

To evaluate the effects of relaxation and guided imagery on:

- Quality of Life
- Mood
- Coping
- Host defences
- Response to chemotherapy
Trial Design

CVAP chemotherapy
6 cycles every 3 weeks

Surgery

RT

FU

Blood samples and psychological tests

Psychological tests only
Psychological Intervention

Randomised to:

Control:
  • High level of support in the Behavioural Oncology Unit

Experimental:
  • Similar support plus relaxation and guided imagery
Relaxation Response

- Integrated hypothalamic response.
- Opposite of the ‘fight-flight’ response.
- Increased parasympathetic a.n.s. tone.
- Associated with feelings of relaxation, calmness, and confidence.
- Can be taught using live training or audio-cassette recordings.
Aristotle (384–322 B.C.)

‘The soul never thinks without a picture.’
Images and Feelings

NO BARRIERS.
NO CROWDS.
NO PLACE LIKE IT.

Discovery Cove
Orlando
Images and Behavioural Change

I miss my lung, Bob.
‘Imagination is more important than education.’
Relaxation and Imagery

PROGRESSIVE MUSCLE RELAXATION I

Professor Leslie G. Walker

Produced by Professor Leslie G. Walker
Director of Oncology Health Centres
Hull and East Riding NHS Trust and
The University of Hull

RELAXATION WITH IMAGERY 2

Professor Leslie G. Walker

Produced by Professor Leslie G. Walker
Director of Oncology Health Centres
Hull and East Riding NHS Trust and
The University of Hull

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Baseline Assessments

- Comprehensive assessment of personality, coping and quality of life.
- Structured clinical interviews.
- Immunological assays (NKCA, LAKCA, cytokines and CD profiles).
Main Measures of Outcome

- Global Quality of Life
- Mood
- Coping
- Host defences
- Response to chemotherapy
Clinical and Pathological Assessments

- Clinical response after 6 cycles of chemotherapy was assessed using standard UICC criteria.
- Pathological response was assessed post-surgically using a 1-5 scale.
No Pathological Response

Before Chemotherapy

After Chemotherapy
Complete Pathological Response

Before Chemotherapy

After Chemotherapy
Patients

96 women with large (>4cms) or locally advanced (T3, T4, N2 and M0) breast carcinoma
Global Quality of Life

Group x Time Interaction p<0.02

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Post chemotherapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>3.4</td>
<td>3.8</td>
</tr>
<tr>
<td>Experimental</td>
<td>3.6</td>
<td>4.0</td>
</tr>
</tbody>
</table>
Mood Rating Scale

Group x Time Interaction p<0.004

Experimental Mean Total Scores

Pre Chemotherapy
After 5 cycles

Control
Experimental

Mean Total Scores

580
540
500
460

The Royal Society of Medicine
Emotional Suppression

Group x Time Interaction p<0.03

Pre Chemotherapy
After 5 cycles

Mean Scores

Control
Experimental

Group x Time Interaction p<0.03
Social Conformity

Group x Time Interaction p<0.05

Mean Scores

- Pre chemotherapy
- After 5 cycles
- End of study

Control

Experimental

Group x Time Interaction p<0.05
Independent Predictors of Response to Primary Chemotherapy (Multiple Regression)

- Size of tumour
- Mood disturbance at diagnosis
Activated T cells (CD25+)

Control
Experimental
*p<0.05 (t-test)

RMANCOVA repeated measures
Group X Time interaction F=2.31, p=0.03
Summary: Immunological effects

The Intervention:

- Enhanced LAK cell activity.
- Increased number of various T lymphocyte subsets (CD2+, CD25+ and CD56+).
- Reduced TNF-α.

Imagery vividness correlated with changes in LAK and NK cell activity.
Summary: Psychological Effects

The Intervention:

- Improved mood and quality of life.
- Enhanced coping.
- Mood disturbance independently predicted clinical and pathological response to chemotherapy.

Walker et al, Brit J Cancer, 1999, 80, 262-268
Conclusions - 1

- Relaxation and guided imagery improve key aspects of quality of life.
- The clinical significance of the biological effects needs further study.
The incidence of clinically significant distress *in both groups* was only a quarter of the level expected.
Hos successus alit: possunt, quia posse videntur.

To these success gives heart: they can because they think they can.

Publius Vergilius Maro
Current PNI Studies

- RCT Relaxation and guided imagery, alone and in combination - colorectal cancer.
- RCT Reflexology and massage - early breast cancer.
- Psychobiological databases
  - colorectal cancer
  - brain cancer
HYPNOTHERAPEUTIC INSIGHTS AND INTERVENTIONS: A CANCER ODYSSEY

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Abstract

Despite advances in molecular biology and therapeutics, cancer continues to be a major source of morbidity and mortality. The diagnosis and treatment are often stressful, and high levels of psychological and psychiatric disorders have been reported consistently over the last 20 years.

However, there is evidence that much of this distress is preventable by providing a support service that is open-access and fully integrated functionally and geographically with other parts of cancer services. This paper reviews the findings of some of the interventional research carried out by the author and his colleagues over the past 20 years. These studies have provided evidence that relaxation therapy, guided imagery and hypnotherapy can be very beneficial in helping patients cope with the diagnosis and treatment. Intriguingly, there is some evidence that they may prolong life, although further studies are required to clarify this. In the meantime, however, it is clear that much can be done to prevent, as well as to treat, cancer-related problems.

Key words: breast cancer, guided imagery, psychoneuroimmunology, relaxation
Hypnotherapy and related interventions can play a significant part in improving quality of life following the diagnosis of cancer.
These interventions can produce statistically significant changes in the neuroendocrine system and in host defences.
However, the clinical significance of these changes in different types and stages of cancer requires further careful study.
In the meantime, it is essential that we do not promise our patients more than we know we can deliver.
The concept of psychoneuroimmunotherapy for cancer is premature.
Conclusions - 2

A great deal can be done to prevent and to minimise distress, by using ‘waking hypnosis’:

- choosing words with care,
- providing support and information,
- using suggestion in the waking state,

Whether they practice formal hypnotherapy or not, all cancer clinicians would benefit from learning basic hypnotherapeutic techniques.
The Waxman Memorial Lecture 2004
Acknowledgements

For further information
http://www.lgwalker.com