Musculoskeletal therapies for neck pain in primary care: from park bench to bedside

Krysia Dziedzic
Arthritis Research UK Professor of Musculoskeletal Therapies
Primary Care management of musculoskeletal conditions

- Common cause of chronic pain and disability in primary care

From Park Bench.........
Annual incidence of consultations in primary care
(per 10,000 population)
Research activity

- Clinical trials
  - High numbers of patients recruited
  - Publications ++++
 Evidence based clinical practice

- Community rheumatology
- General Practitioners & Community Pharmacists
- Physiotherapists
- Occupational Therapists

...............To Bedside
Ask an important question
Workshops for physiotherapists
- 1998

Neck pain

- Neck pain is common and disabling
- Neck pain is frequently managed with physical approaches
Treatment options include:

- Stretching and strengthening exercises for the neck.
To determine whether manual therapy (with advice and exercise) or Pulsed Shortwave Diathermy (with advice and exercise) are better than advice and exercise alone in the treatment of non-specific neck disorders
Aim of the study

Primary objective

to compare at 6 months the effect of adding:
  1. Manual Therapy
  2. PSWD

to Advice and Exercise alone

Secondary objectives

• to compare clinical outcomes at 6 weeks
• to compare cost consequences at 6 months
Develop protocol
Population
User Involvement
Intervention
Comparator
Outcome
Companion
A PRAGMATIC APPROACH: in primary care

Protocol developers
Population

● **Inclusion**
  - 18 years and over
  - Clinical diagnosis neck pain and/or stiffness (including unilateral arm pain)
  - Referred from primary care to physiotherapy
  - No treatment previous 6 months

● **Exclusion**
  - ‘Red flags’
  - Serious pathology, inflammatory arthritis, progressive neurological signs, contraindication to treatment, injury awaiting claim, pregnancy
Intervention

All patients received:

• home exercise sheet
• one to one advice on managing their neck problem
• an information leaflet to take home
Interventions & Comparator

- Stretching and strengthening exercises for the neck

Arthritis Research Campaign National Primary Care Centre
Keele University

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Outcome

- Primary outcome measure
  - Northwick Park Neck Pain Questionnaire
    - pain disability measure (Leak et al, 1994)
    - 9 Questions 100-point scale
“Is this treatment helpful on average for a wide range of patients?”
The effectiveness of manual therapy or pulsed short-wave diathermy in addition to exercise and advice for neck disorders; a pragmatic RCT in physiotherapy clinics.

1999-2002
Physiotherapy centres
User Involvement

Research Findings
Results

- 735 patients were screened
- Target recruitment 350 in 22 months
- Mean age 51 years
- 63% Female
Adjusted scores

Adjusted mean Northwick Park score

Treatment
- A&E
- MT
- PSWD

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Summary of results

- No differences in primary outcome at 6 m
- Patient satisfaction was in favour of MT
- Treatment course was shorter in the advice and exercise group
- 350 patients randomised, 15 centres, 70 physiotherapists
  - 92% f/u at 6 months
  - 98% received their allocated treatment
Conclusion

The addition of manual therapy or PSWD to exercise and advice alone does not provide any better clinical improvement in the physiotherapy treatment of non-specific neck disorders.
Effectiveness of Manual Therapy or Pulsed Shortwave Diathermy in Addition to Advice and Exercise for Neck Disorders: A Pragmatic Randomized Controlled Trial in Physical Therapy Clinics

KRYSLA DZIEDZIC, JONATHAN HILL, MARTYN LEWIS, JULIUS SIM, JANE DANIELS, AND ELAINE M. HAY
Sensitivity to Change and Internal Consistency of the Northwick Park Neck Pain Questionnaire and Derivation of a Minimal Clinically Important Difference.
Sim, Julius PhD; Jordan, Kelvin PhD; Lewis, Martyn PhD; Hill, Jonathan MSc; Hay, Elaine M. MD; Dziedzic, Krysia PhD

Predictors of Poor Outcome in Patients With Neck Pain Treated by Physical Therapy.
Hill, Jonathan C. MSc; Lewis, Martyn PhD; Sim, Julius PhD; Hay, Elaine M. MD; Dziedzic, Krysia PhD

An economic evaluation of three physiotherapy treatments for non-specific neck disorders alongside a randomized trial.
Lewis M, James M, Stokes E, Hill J, Sim J, Hay E, Dziedzic K.


Whitehurst DG, Bryan S. Another Study Showing that Two Preference-Based Measures of Health-Related Quality of Life (EQ-5D and SF-6D) are not Interchangeable. But why Should we Expect Them to be? Value Health. 2011 Feb 9. [Epub ahead of print]
Verhagen et al, 2011
Man Therapy

Average function (0-100)
And another trial.....

Physiotherapy arc neck trial, hands on or electrotherapy research

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What works for neck problems?

PANTHER study results

We found that:

- on average there was no additional benefit of adding manual therapy or pulsed shortwave diathermy to the package of advice and exercise.

- at 6 weeks the group receiving manual therapy with advice and exercise were more satisfied with their physiotherapy compared with those who had advice and exercise on its own.

- on average patients receiving advice and exercise with no further addition to treatment tended to have fewer treatment sessions than the other two approaches.
“In an attempt to find out what really works, British physiotherapists conducted a rigorous clinical trial……. These findings are important. They show that the best options for neck pain are fairly simple and inexpensive.”

Professor Ernst The Guardian 9th August 2005
Manual therapy (manipulation, mobilisation) plus advice plus exercise versus pulsed short wave diathermy plus advice plus exercise versus advice plus exercise alone:

One subsequent pragmatic multicentre RCT (350 people with chronic neck pain) assessed whether the addition of manual therapy (hands on, passive or active assisted movements, mobilisations, or manipulations; 63% had mobilisation physiotherapy) or pulsed short wave diathermy over 6 weeks to advice plus exercise was more effective than advice plus exercise alone. [26] The primary outcome measure was pain as measured by the Northwick Park Neck Pain Questionnaire. The RCT found no significant difference in pain between adding manual therapy to advice plus exercise and advice plus exercise alone at 6 weeks or 6 months (6 months, difference in mean Northwick Park change scores: + 1.4, 95% CI –2.8 to + 5.5). [26] It also found no significant difference in pain between adding pulsed short wave diathermy to advice plus exercise and advice plus exercise alone at 6 weeks or 6 months (6 months, difference in mean Northwick Park change scores: + 1.3, 95% –2.9 to + 5.5). [26]

Systematic review
Manual therapy with or without physical medicine modalities for neck pain: a systematic review


Best Evidence on Assessment and Intervention for Neck Pain

Eric L. Hurwitz, 1 Eugene J. Carragee,2,3 Gabrielle van der Velde,4,5,6,7 Linda J. Carroll,8 Margareta Nordin,9,10 Jaime Guzman,11,12 Paul M. Peloso,13 Lena W. Holm,14 Pierre Côté,5,6,7,15 Sheilah Hogg-Johnson,5,16 J. David Cassidy,6,7,15 and Scott Haldeman17,18
Neck Pain Task Force

- Grade I:
- Grade II:
- Grade III:
- Grade IV:
Grade I

- Neck pain with no signs or symptoms of major structural pathology and no or little interference with daily activities; will likely respond to minimal intervention such as reassurance and pain control; does not require investigations or ongoing treatment
Grade II

- Grade II: Neck pain with no signs or symptoms of major structural pathology but interference with usual daily activities; requires pain relief and early intervention aimed at preventing long-term disability
Grade III

- Neck pain with no signs or symptoms of major abnormality structural pathology, but presence of neurological signs such as decreased reflexes, weakness or sensory deficit; might require investigation and, occasionally more invasive treatments
Grade IV

- Neck pain with signs or symptoms of major structural pathology, such as fracture, myelopathy, neoplasm, or systemic disease; requires prompt investigation and treatment
Core treatment recommendations for non-specific neck pain

Exercises, manual therapy, analgesics, acupuncture, and low-level laser therapy have been shown to provide some degree of short-term relief of neck pain without trauma.

Manual therapy is often used with exercise to treat neck pain for pain reduction and improved quality of life.

Exercises and mobilization have been shown to provide some degree of short-term relief after a motor vehicle collision.
Injection therapy

Assess for red flags
First line pain relief
Advice to remain active
Posture and seating
Address psychosocial factors
Patient information and exercise sheet

Manual therapy and exercise

General exercises

Acupuncture

Laser

Ergonomics

Surgery

Referral to Secondary care

Local Agencies
e.g. exercise in the community

Pain management and cognitive behavioural therapy
From Park Bench to Bedside

1997

2011
Comparison with OA & LBP

- **OA**
  - NICE OA guidelines
  - support for self management
  - access to information, exercise, weight loss
  - first line analgesia

- **LBP**
  - NICE LBP guidelines
  - advice, exercise
  - acupuncture, manual therapy, exercises
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Physiotherapists
Therapy managers
User Group Forum
General practitioners

The North Staffordshire NHS Primary Care Research Consortium

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