What is going on down under: Clinician-driven research and research-driven practice

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Overview

1. Model we use to facilitate clinical research
2. Examples from our research program
3. Open-forum discussion

Model

Guiding principles:
1. How do therapists spend most of their time?
2. What is the evidence base?
3. Conduct DO-ABLE, simple and low cost clinical trials.

Help make it happen
What does the evidence say?

Physical-therapeutic interventions:


No. of randomised controlled trials

39 trials:
- stretch and passive movements...............5
- strength training............................4
- general exercise............................7
- skill training................................6
- hand and upper limb training...............6
- pain-relieving therapies....................3
- others.......................................8

We have very few conclusive RCTs

Clearly effective:
- Acupuncture.................................1
- Fitness and strength training..............3
- Gait training..................................2

Total.............................................6/31


The problem - contractures

Current clinical practice

- Stretch
- Passive movements

Our trials

4 randomised controlled trials:
- 109 subjects = 143 limbs
- stretch/passive movements VS no intervention

*Source:*

Methods

20 minutes of PMs daily for 6 months
30 minutes of standing 3X week for 3 months

Stretch for the treatment and prevention of contractures (Review)

The problem – poor strength

Current clinical practice
**Current clinical practice**

ES to increase voluntary strength

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**Our trials**

3 randomised controlled trials:
- 84 subjects = 136 limbs
- progressive resistance training +/- ES VS no intervention

*Source:*

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**Results**

- strength training + ES
- strength training
- ES

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**The problem – poor motor control**

Repetitious practice using principles of motor learning

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The problem - poor motor control
**Our trials**

2 RCTs:
1. chronic
2. recent

Comparison:
1. usual care
2. intensive training + usual care

**Results**

Mean between-group difference = 64 mm
95% CI (20 to 108)

Mean between-group difference = -20 mm
95% CI (-64 to 24)

**Interpretation**

Recently-injured patients are learning new strategies to sit unsupported as part of ADL training.

The ADL training they receive renders additional training redundant.

There is not a simple linear relationship between dosage and benefit.
**Current trials**

**Wii-like games + ES:**
1. Hand function
2. Neural recovery


**Standing for:**
1. bowel function
2. spasticity

Source: ACTRN12612000003873

**ES cycling:**
1. bladder function
2. spasticity

Source: ACTRN12611000923965

**Ventolin immediately post injury:**
1. respiratory Fx

Source: ACTRN12609000828224

**Other types of studies**

**Impressions of change**

S4-5 sensory and motor self-report
REHABILITATION Studies Unit

Ability of PTs to predict mobility for one year post SCI.

Other types of studies


Key findings:
- RCT, PEDro = 7/10
- Treadmill + overhead suspension VS conventional Tx
- Walking speed (m/sec): mean between-group difference (95% CI) = -0.06 (-0.3 to 0.2)

Walking, neural plasticity and...

www.blog.sciseek.com

Lokomat
Treadmill with overhead suspension


Key findings:
- RCT, PEDro = 5/10
- 4 training paradigms
- Distance walked (m): mean between-group difference for OG vs RW (95% CI) = 20 (-2 to 42 approx.)
REHABILITATION Studies Unit

Summary

Are we advancing?

Definitely advancing but many challenges

Take-home message

EBP requires good skills in reading the evidence. Best way to develop these skills is through participating in research.

We must:
• be open minded
• be primarily interested in the pursuit of truth
• be willing to change practice
• go back and put an evidence base to everything we do

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