

CAHE JC Critically Appraised Article Summary

Journal Club Details

Date of submission	July 2008
Journal Club location	Southern Therapy Service
JC Facilitator	Jessica Atkinson and Bronwyn Keller
JC Presenter	Edgar Barsamian

Clinical Scenario

What is the effect of daily stretching on wrist contracture of stroke patients?

Review Question/PICO/PACO

- P** Adults undergoing rehabilitation after stroke
- I** Daily stretching of the wrist and finger flexors
- C** Routine Upper Limb Retraining
- O** Range of motion, pain and function

Article/Paper

Horsley SA, Herbert RD, Ada L. *Australian Journal of Physiotherapy* 2007; 53:239-245.

Four weeks of daily stretch has little or no effect on wrist contracture after stroke: a randomised controlled trial

Article Methodology: Randomised controlled trial

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By CAHE staff member: Lucyllynn Lizarondo

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Ques No.	Yes	Can't Tell	No	Comments
1	✓			<p>The study asked a clearly focused question.</p> <p>Population: Patients were included if they were 18 years of age or older, with stroke or stroke-line brain injury and unable to extend the affected wrist past neutral. Excluded were patients who had language, comprehension, or cognitive problems which prevented informed consent, presented with co-existing upper limb conditions which directly affected movement and those who were not allowed to participate in upper limb rehabilitation.</p> <p>Intervention: The experimental group received, aside from usual upper limb rehabilitation, daily 30 minute stretching of the wrist and finger flexors for five days a week for four weeks. The control group received only the usual upper limb rehabilitation. Upper limb rehabilitation consisted of strengthening and task-specific practice of upper limb activities.</p> <p>Outcomes: Harvey et al method of measuring passive wrist extension with fingers in extension was used to determine the degree of contracture. A visual analogue scale was utilised to measure pain and items from the Motor Assessment Scale was used to evaluate upper limb activity.</p>
2	✓			<p>This study is a randomised controlled trial (RCT) which is just appropriate to be so. RCT is always preferable as it eliminates or minimises bias.</p> <p>Is it worth continuing: YES</p>
3	✓			<p>The participants were allocated to the intervention and control groups by a computer-generated randomisation method. A person out of "site" and independent from the recruitment process was held responsible for the randomisation table. Group allocation was revealed through a phone call.</p> <p>The two groups were well-matched in terms of diagnosis, age, gender, side of hemiplegia and chronicity of stroke.</p>
4		✓		<p>Outcome measures were collected by therapists who were blinded to treatment allocation. It is not possible however, to blind participants and therapists who administered the intervention in this study. This provides a potential source of bias.</p>
5	✓			<p>The trial reported that analyses were based on the intention-to-treat principle, which means that all patients randomly assigned to either group were analysed, regardless of whether or not they completed or received the treatment.</p>
6	✓			<p>Data on the different outcomes were measured and collected in the same way for all the participants.</p>
7		✓		<p>Although the authors performed power calculation, the sample size used was still insufficient to provide definitive evidence.</p>



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Ques No.	Yes	Can't Tell	No	Comments
8				<p>Mean and mean differences between groups were presented to determine effectiveness of interventions. Between week 0 and 4, the maximum passive wrist extension did not change for the experimental group and slightly decreased in the control group. However, there was no significant difference between the two. At weeks 5 and 9, there was even less difference between the groups. In terms of pain, there was no significant difference between groups for all weeks of measurement. Similar results were found for upper limb activity.</p> <p>Bottom line results: Results indicate that 4 weeks of regular stretching has little or no effect on wrist contracture after stroke. However, this should be treated with caution as the size of this effect is not sufficiently precise.</p>
9				<p>The small sample size used in this study cannot provide definitive evidence of an effect or lack of effect. The wide confidence intervals suggest that there is a large degree of uncertainty in the size of the effect – it could be anywhere from no effect (below 0) to a clinically worthwhile effect.</p>
10		✓		<p>Because of the sample size, it is doubtful whether this group is representative of patients who develop wrist contracture after stroke. The generalisability and applicability of the results seem to be limited.</p>