*i*CAHE JC Critical Appraisal Summary

Journal Club Details

Journal Club location   **Lyell McEwin Hospital**

JC Facilitator   **Yongyang Lu**

JC Discipline   **Occupational Therapy**

Question

There are arguments about the effect of resting splint in radial nerve impairment. We just wonder what evidence is out there to support this treatment. What is the evidence of resting splint in treating radial nerve injury?

Review Question/PICO/PACO

P   **Patients with radial nerve injury**

I   **Resting Splint**

C   Nil

O   **Effect**

Article/Paper

Cantero-Téllez, R., Miguel, G.M. and Cristina, L.T., 2016. Effects on Upper-Limb Function with Dynamic and Static Orthosis Use for Radial Nerve Injury: A Randomized Trial. *J Neurol Disord*, *4*(265), p.2.

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Article Methodology: Randomised Control Trial

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Ques No.	Yes	Can't Tell	No	Comments
1	✓			**Did the trial address a clearly focused issue?** The purpose of this study is to determinate which orthosis/splint is the best option to improve patient's upper limb function, measured with DASH (Disability arm shoulder and hand) questionnaire when surgical intervention is not indicated.
2		✓		**Was the assignment of patients to treatments randomised?** Participants (N=18) were registered into an Excel database in order of their arrival and were randomized into 2 equal groups done by a software program (9 patients in the static orthosis group and 9 in the dynamic orthosis group). While this appears to be using appropriate randomisation, without greater detail of what the software was, or how the randomisation occurred, we cannot conclude it was appropriate. Additionally, the registration upon arrival into excel suggest that this may not have been true randomisation.
3		✓		**Were all of the patients who entered the trial properly accounted for at its conclusion?** There is no information provided regarding drop out or attrition rates for this study. We cannot assume that all participants who entered the study were accounted for at conclusion (as it is possible that while only 18 participants were reported as the 'final sample size' there were more participants who dropped out and were not reported on). Lack of attrition must be made explicit for this question to be rated as a yes. **Is it worth continuing?** **YES**
4		✓		**Were patients, health workers and study personnel 'blind' to treatment?** There was no discussion regarding blinding within this report. We are unable to tell if there was blinding in place – it is more likely that there was not blinding in place and therefore results should be interpreted with caution.
5	✓			**Were the groups similar at the start of the trial?** This paper only talked about sex and age in the participants section, but not a breakdown of the per group characteristics as required of this question. Normally, a table displaying patient characteristics, or a paragraph which looks at the similarities of patients across multiple characteristics. There is a single characteristic (age) which is broken down per group in this demographic table. Other characteristics (gender, ethnicity, comorbidities, occupations) were not considered. While this paper did provide demographics (age) in a characteristics table, and the groups were similar at the start of the trial in this demographic, satisfying the yes criteria for this question, the results should be interpreted with caution.
6		✓		**Aside from the experimental intervention, were the groups treated equally?** There are no indications that the groups were treated differently other than the intervention, however there was no attempt made to gather information about other treatments participants were undergoing which may have affected the results (that was reported). Therefore it is impossible to confidently confirm that the only difference between groups was the experimental intervention.

7				**What are the results?** The variance analysis showed a main effect in time lapse ($F(1, 58) = 71$, $P<0.001$) indicating a significant improvement in function. Static Orthosis Group: DASH (pre) m=77.2 (95% CI: 66.7 to 81.60) compared with DASH (post) m=52.42 (95% CI: 40.60 to 66.70). Dynamic Orthosis Group: DASH (pre) m=74.76 (95% CI: 62.50 to 79.9) compared with DASH (post) m=60.88 (95% CI: 50.40 to 66.80). Treatment with static orthosis produces further improvement in function compared to the treatment with dynamic orthosis. **How large was the treatment effect?** Results were significantly better for the static orthosis/splint group than for the dynamic splint group.
8				**How precise was the estimate of the treatment effect?** P values and 95% confidence intervals were utilized for this study.
9	Journal Club to discuss			**Can the results be applied to the local population?** **CONTEXT ASSESSMENT (please refer to attached document)** – *Infrastructure* – *Available workforce (? Need for substitute workforce?)* – *Patient characteristics* – *Training and upskilling, accreditation, recognition* – *Ready access to information sources* – *Legislative, financial & systems support* – *Health service system, referral processes and decision-makers* – *Communication* – *Best ways of presenting information to different end-users* – *Availability of relevant equipment* – *Cultural acceptability of recommendations* – *Others*
10				**Were all important outcomes considered?**
11				**Are the benefits worth the harms and costs?**
12				**What do the study findings mean to practice (i.e. clinical practice, systems or processes)?**
13				**What are your next steps?** *ADOPT, CONTEXTUALISE, ADAPT* **And then (e.g. evaluate clinical practice against evidence-based recommendations; organise the next four journal club meetings around this topic to build the evidence base; organize training for staff, etc.)**
14				**What is required to implement these next steps?**