Effects of electrical stimulation combined with rotator cuff rehabilitation for the management of hemiplegic shoulder pain and glenohumeral subluxation in people with chronic stroke

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INTRODUCTION

- Hemiplegic shoulder pain (HSP) and Glenohumeral subluxation (GHS) are common post-stroke complications
- HSP is reported in up to 65% and GHS in 81% of patients in chronic stage.
- Poor motor function and prevalence of rotator cuff (RC) muscle weakness increases the risk of developing HSP and GHS.

AIM

To assess the effects of electrical stimulation combined with RC rehabilitation in reducing HSP and GHS in people with chronic stroke.

METHOD

- **25 patients (17 men, 8 women; mean age 62±9 years; GHS-All, HSP- 17)**

Figure 1a – US scanning . 1b) Acromion Greater Tuberosity distance (GHS assessment)

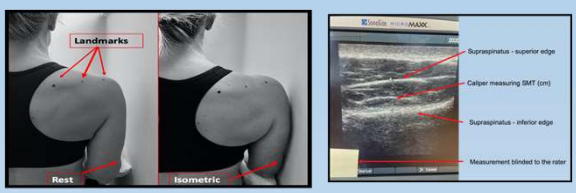

Figure 2a – US scanning . 2b) Supraspinatus muscle thickness assessment

- **HSP – Visual Analogue Scale**

Intervention

- Electrical stimulation to supraspinatus, infraspinatus and teres minor muscles (20-30 mins) and RC rehabilitation (isometric progressing to strength exercises) for 12 weeks

Results

- 16 patients attended follow-up assessments
- Mean AGT distance reduced from 2.6cm to 2.4cm.
- Thickness of supraspinatus at rest and contraction increased from 1.3cm to 1.8cm and 1.5 to 1.9cm respectively.
- At rest, majority of patient did not report HSP both at baseline and follow-up period
- However, HSP reduced by 60% in (n=10) during movement at the follow-up period.

CONCLUSION

- Electrical stimulation targeting RC muscles combined with strength exercises has potential to reduce GHS and HSP in people with chronic stroke.
- **Ultrasound has potential for use as an outcome measure both in research and clinical fields.**
- **Future research should consider investigating the effectiveness of electrical stimulation to RC muscles in a clinical trial both for prevention and treatment of HSP and GHS.**

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