

FROZEN SHOULDER: HOW EFFECTIVE IS ULTRASOUND GUIDED HYDRODILATATION OF THE GLENOHUMERAL JOINT AND IMMEDIATE PHYSICAL THERAPY (SHIP) COMPARED TO USUAL CARE (SHUC)

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BACKGROUND

Frozen shoulder is a disabling condition characterized by shoulder pain and severe loss of range of motion (ROM). Often insidious, the average course of spontaneous remission is 18 months. Ultrasound guided hydrodilatation (U/SG-H) of the glenohumeral joint (GHJ) capsule is an intervention for FS which can improve patients shoulder ROM, function, pain and can shorten the length of disability. The combination of hydrodilatation and immediate physical therapy (within 6hr of the procedure) is frequently recommended but has not undergone rigorous research

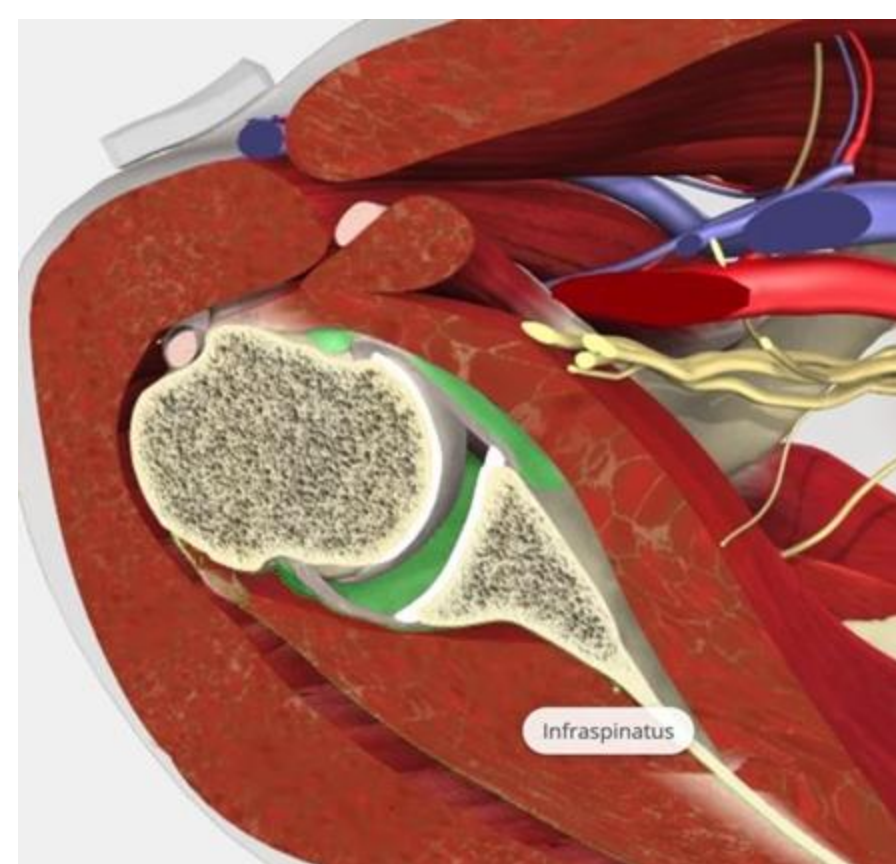


Figure 1: glenohumeral joint is depicted, with the green identifying the capsule. This capsule can be visualized using ultrasound, and the effusion resulting from hydrodilatation can be used as confirmation of correct positioning.

OBJECTIVE

To determine if physiotherapy initiated immediately (within 30 minutes) after a shoulder hydrodilatation injection will improve frozen shoulder symptoms of pain, limited ROM, patient function, and patient well-being more when compared to usual care physiotherapy after hydrodilatation (physiotherapy 7-14 days post-injection).

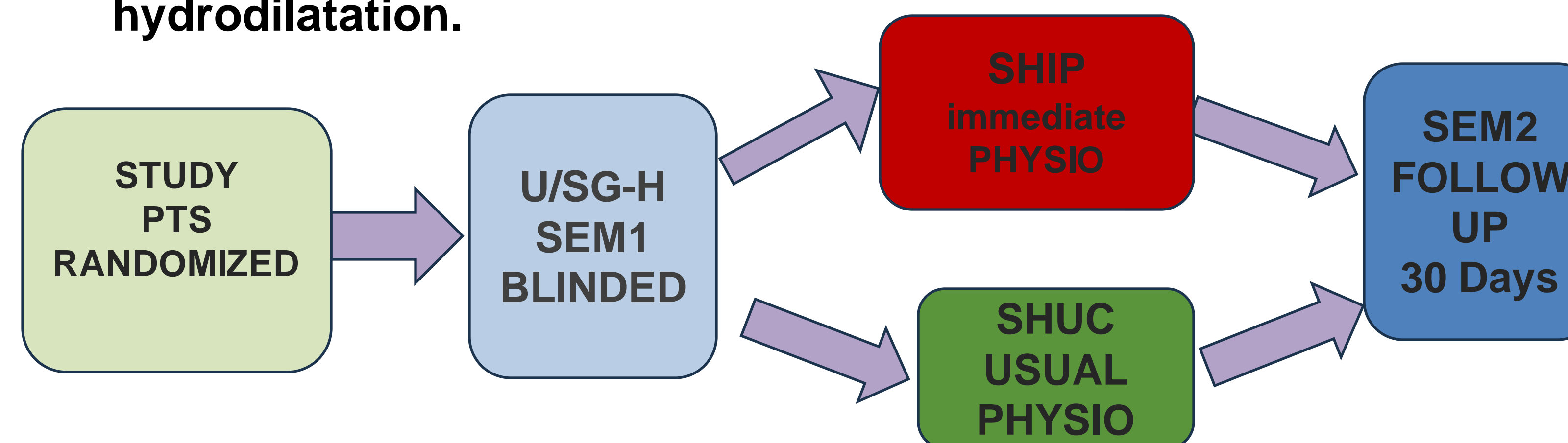
THE PROCEDURE

. A standard volume of triamcinolone, 5ml local anaesthetic, and 20ml sterile normal saline was injected into the affected GHJ with ultrasound guidance. One Sport & Exercise Medicine (SEM1) Physician completed the U/SG-H) n clinic. The SEM1 was blinded to the pts research group



INTERVENTION

Patients with clinical diagnosis of F/S he shoulder who met the inclusion & exclusion criteria were randomized into an immediate physiotherapy SHIP or usual physiotherapy SHUC group. Each participant had the standardized U/SG-H. SHIP participants then immediately proceeded to physical therapy within 30 minutes of the injection. The SHUC group attended physical therapy one week after the hydrodilatation. All participants had two additional physiotherapy sessions, followed by a second assessment with a second blinded SEM physician 30 days following the hydrodilatation.



OUTCOME MEASURES

- Active and passive shoulder ROM for forward flexion, extension, abduction, external rotation, and internal rotation/reach.
- Visual analog scales (VAS) (0-10) asking participants to indicate their level of pain, ease in completing activities of daily living, and ease in participating in exercise

Standardized questionnaires on shoulder pain, function were completed at the first and last visits. This included the following:

- Upper Extremity Function Scale (UEFS)
- QuickDASH
- Shoulder Pain and Disability Index (SPADI)



Figure 2: a patient with left shoulder adhesive capsulitis performing external rotation of the shoulder is shown both pre- (A) and post- (B) hydrodilatation

REFERENCES + ACKNOWLEDGEMENTS

1. Saltychev et al, 2018. Effectiveness of hydrodilatation in adhesive capsulitis of shoulder: a systematic review and meta-analysis.
2. Park et al, 2018. Comparison of therapeutic effectiveness between shoulder dilatation arthrography with translation mobilization and distanetion alone in patients with frozen shoulder.

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RESULTS

The average age of all pts was 52.6, 12 pts were female

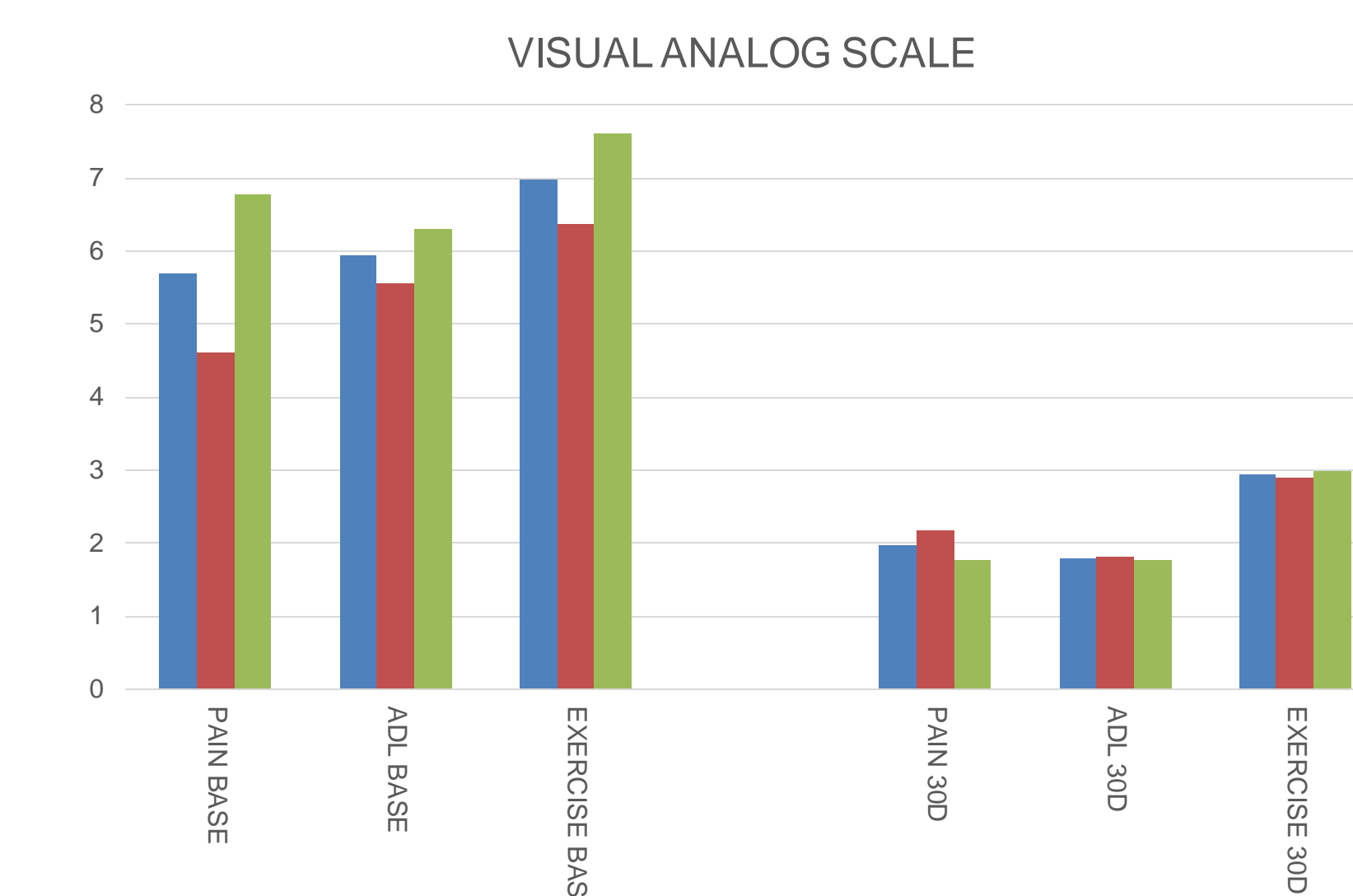


Table 1: Demographics

ALL PTS HAD A REDUCTION IN PAIN AT 30 Days, SHIP change from baseline -2.45, SHUC -4.99 mean difference p value=0.03

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VAS pain 5.70 (2.98) 4.62 (3.24) 6.77 (2.40)
 VAS ADL 5.94 (2.20) 5.57 (2.09) 6.31 (2.37)
 VAS Exercise 6.99 (2.39) 6.37 (2.44) 7.61 (2.29)

MEAN SHOULDER ROM:

THE SHIP GROUP HAD STATISTICALLY SIGNIFICANT IMPROVEMENTS IN FWD ELEVATION & ABDUCTION AT 7 DAYS POST PROCEDURE BUT THIS WAS NOT APPARENT AT 30 DAYS

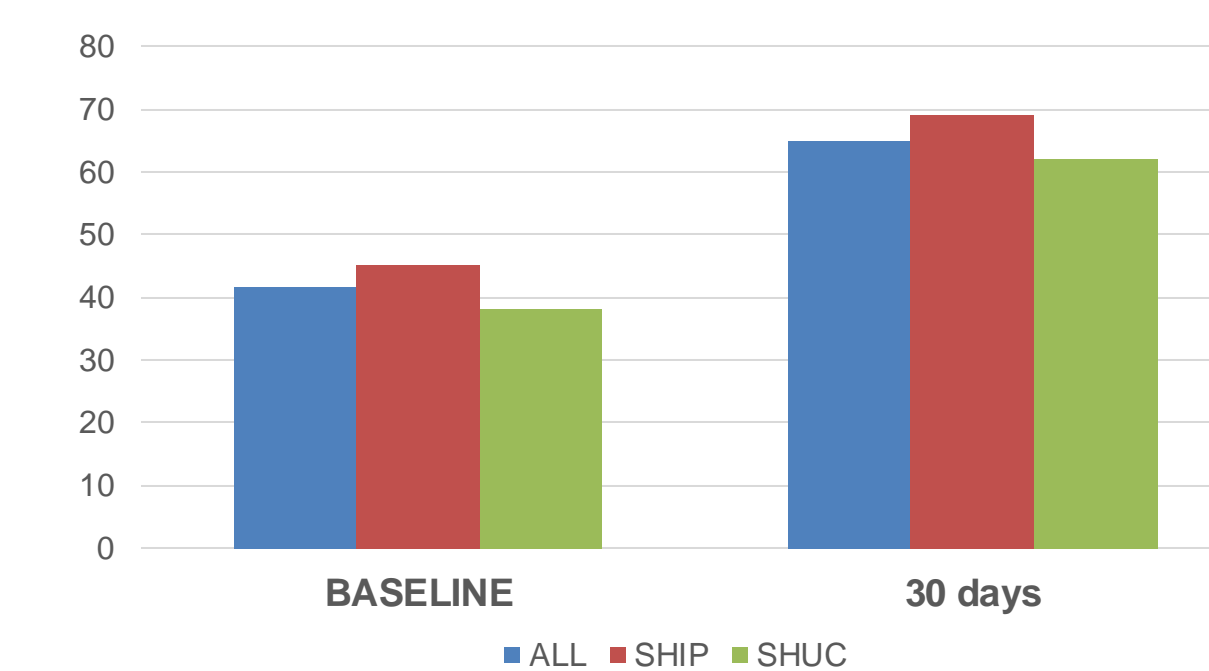
SHIP BASE FWD=108.2, 7D=124.9, 30D=131.9 (p=0.02)

SHUC BASE FWD=93.0, 7D=122.5, 30D=126.8

SHIP BASE ABD passive = 67.0, 7D=74.7, 30D=113.5 (p=0.04)

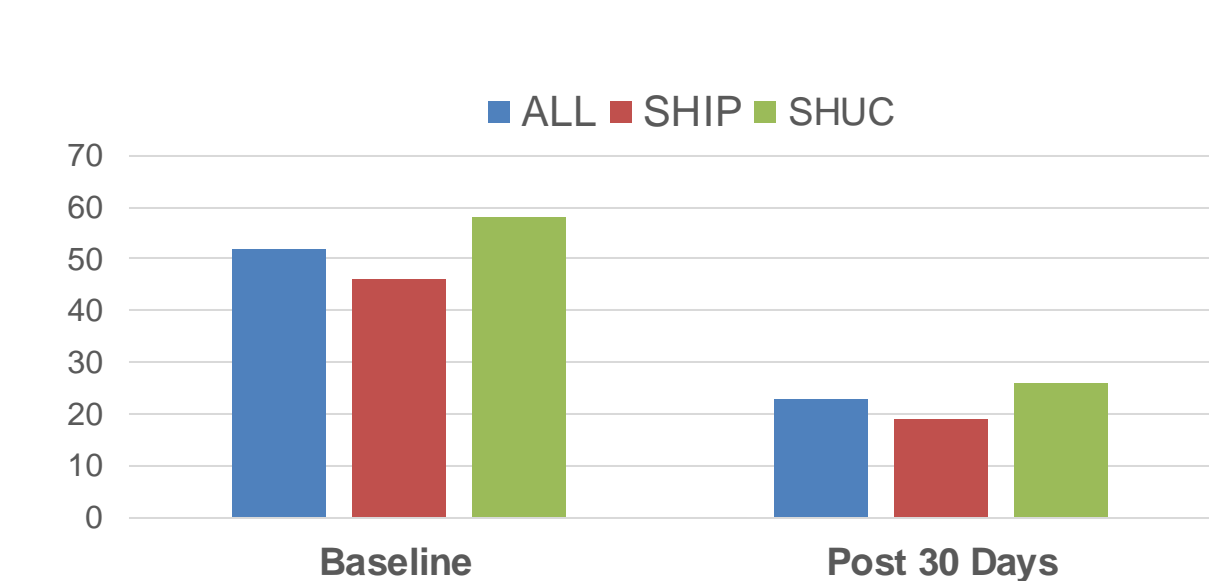
SHUC BASE ABD passive = 47.9, 7D=82.8, 30D=119.2

UPPER EXTREMITY FUNCTION SCALE 0/80



ALL GROUPS IMPROVED IN UEFS BEYOND the MICD (10 points) NO statistical significance

QUICK DASH



ALL GROUPS IMPROVED IN QUICK DASH BEYOND reported MICD of 16-20 change SHIP BASE=46.2 30D=19.2 SHUC BASE=58.0 30D=26.1 NO Stat diff

CONCLUSION + DISCUSSION

Hydrodilatation is an effective method in improving patients' pain, range of motion, and function in a shoulder with FS. ROM improved more in SHIP group at 7 days but not at 30days. All pts had improvements in UEFS, VAS and QUICK DASH. A larger RCT will be necessary in order to determine the differences if any, in SHIP versus SHUC in improving pts pain function and shoulder ROM