

Comparison of effectiveness of Pulsed Radiofrequency Ablation of Suprascapular Nerve Vs combined Suprascapular and Lateral Pectoral Nerve for Management of Chronic Shoulder Pain

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Introduction

- ✓ Chronic shoulder pain : 3rd leading musculoskeletal pain, lifetime prevalence 67%
- ✓ Innervation of Shoulder joint: 4 Quadrant:
 - ✓ Anterosuperior quadrant: Suprascapular nerve and Lateral pectoral nerve
 - ✓ Anteroinferior quadrant: main trunk of Axillary nerve,
 - ✓ Posterosuperior quadrant: lateral trunk of Suprascapular nerve
 - ✓ posteroinferior quadrant by posterior division of Axillary nerve
- ✓ Shoulder pain mostly originates from superior aspect of the joint capsule.
- ✓ Present study aims to compare the effectiveness of PRF of the SSN alone vs SSN and LPN PRF for the management of chronic shoulder pain

Aim and Objectives

- ✓ AIM: To compare the effectiveness of pulsed radiofrequency ablation of the SSN alone vs SSN and LPN for the management of chronic shoulder pain

Methods

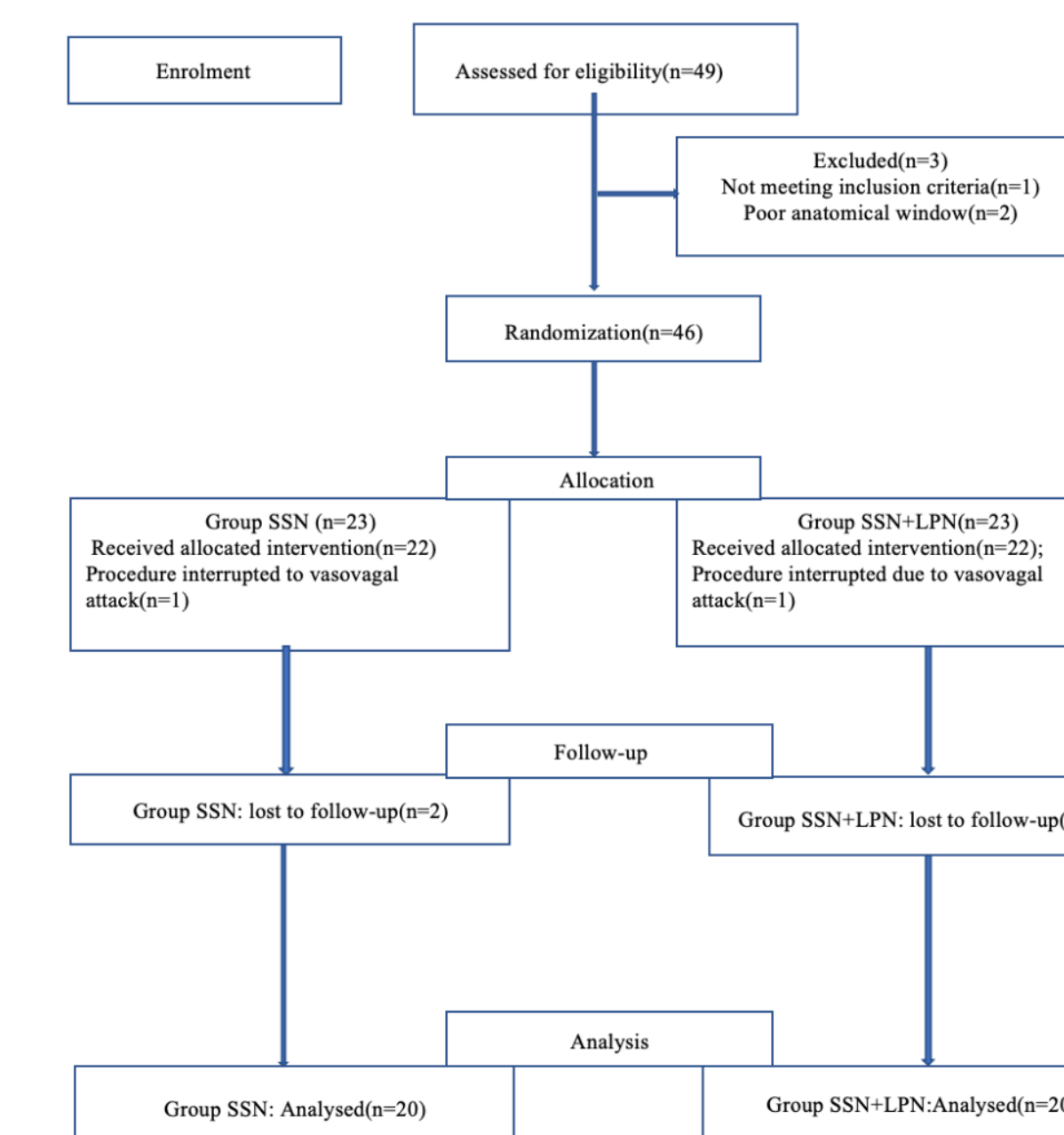
- ✓ This single centre prospective randomized controlled trial
- ✓ Ethics Committee approval (IEC-INT/2023/MD-1150) dated 26.06.2023
- ✓ CTRI registration(CTRI/2023/10/058404) dated 06.10.2023
- ✓ **Inclusion criteria**
 - ✓ Age >18yrs, Chronic shoulder pain (of >3 months at the time of examination) associated with one of the following pathologies
 - ✓ Rotator cuff injury, frozen shoulder/adhesive capsulitis, arthritis of shoulder joint, subacromial impingement syndrome
- ✓ **Exclusion criteria**
 - ✓ Patient refusal, Infectious arthritis,
 - ✓ Extrinsic origin of shoulder pain (cervical radiculopathy).

Methods contd...

- ✓ **Randomization:** randomly assigned to two groups
 - ✓ Group SSN: Patients received PRF of SSN nerve alone.
 - ✓ Group SSN+LPN: Patients received PRF of both SSN and LPN
- ✓ **Outcome Assessment**
 - ✓ Pain intensity (VNRS), Disability (SPADI), Range of Motion (ROM) and EQ 5D 5L
- ✓ **Data collection :** baseline, and 2, 4, 8 and 12 wks. after intervention.
- ✓ Primary Outcome: incidence of patients having effective pain relief ($\geq 50\%$) at 3 months.
- ✓ Secondary outcomes were NRS, SPADI, ROM, EQ5D5L at score by SPADI, range of motion, and quality of life by EQ5D5L at various time
- ✓ **Statistical Analysis:**
 - ✓ Demographic data: either the Student's t-test or chi-square test.
 - ✓ Categorical data, including the primary endpoint, were analyzed with the chi-square test.
 - ✓ NRS, SPADI, ROM and EuroQoL over time, a two-way RMANOVA

Results

Figure1: CONSORT flow diagram



Parameter	Gp SSN (n=20)	Gp SSN+LPN(n=20)
Age (years)	49.6±14.2	49.7±12.2
Gender(M/F)#	10/10	5/15
BMI (kg/m2)	27.9±4.4	28.2±2.3
Duration of pain mn	9.05±2.1	9.1±2.4
Rotator cuff injuыр	16(80%)	16(80%)
Adhesive capsulitis	4(20%)	4(20%)
Baseline NRS	8.7±1.1	8.3±1.17
Baseline SPADI	67.7±16.3	69.3±14.4
Baseline ROM (deg)	87.7±36.7	79±21.5

Table 1: baseline parameters

No difference in incidence of patients having effective pain relief($\geq 50\%$ reduction in NRS) in both groups at 3 months (45% in SSN versus 55% in SSN+LPN) ($p>0.05$)

Results contd....

RMANOVA: indicated a statistically significant relationship between time and NRS, SAPDI, ROM and QOL scores ($P = 0.001$) but no significant interaction between NRS, SAPDI, ROM and QOL scores and groups ($P> 0.05$).

Both groups showed a significant decrease in NRS, SAPDI, ROM and QOL scores compared to the baseline. When comparing the groups, the two groups were similar at all other time points for all patient reported outcomes except for a 12-week significantly better ROM in group SSN compared to group SSN+LPN ($P = 0.014$). (Figure 2-6)

Figure 2: NRS of both groups

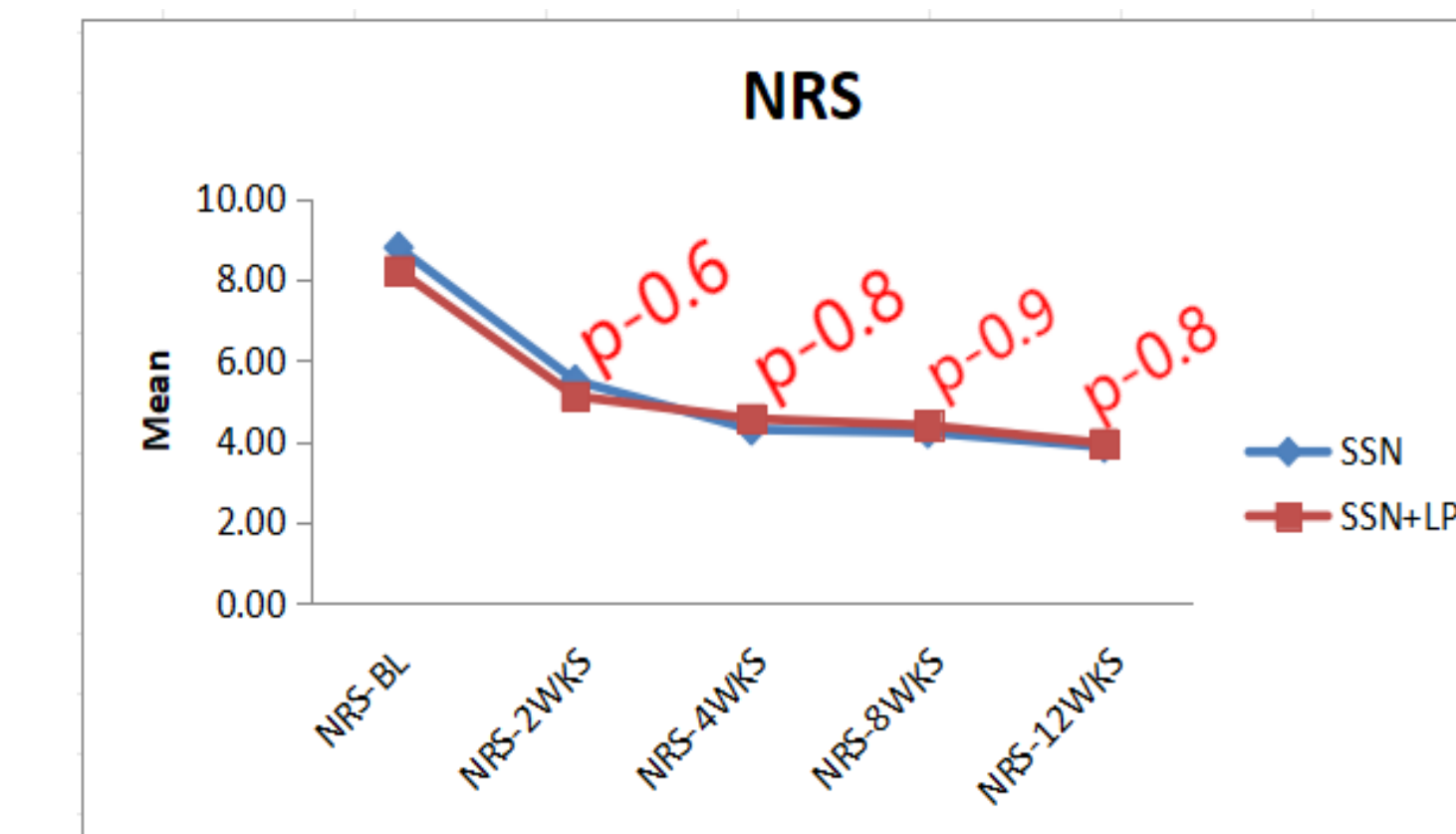


Figure3: SPADI score

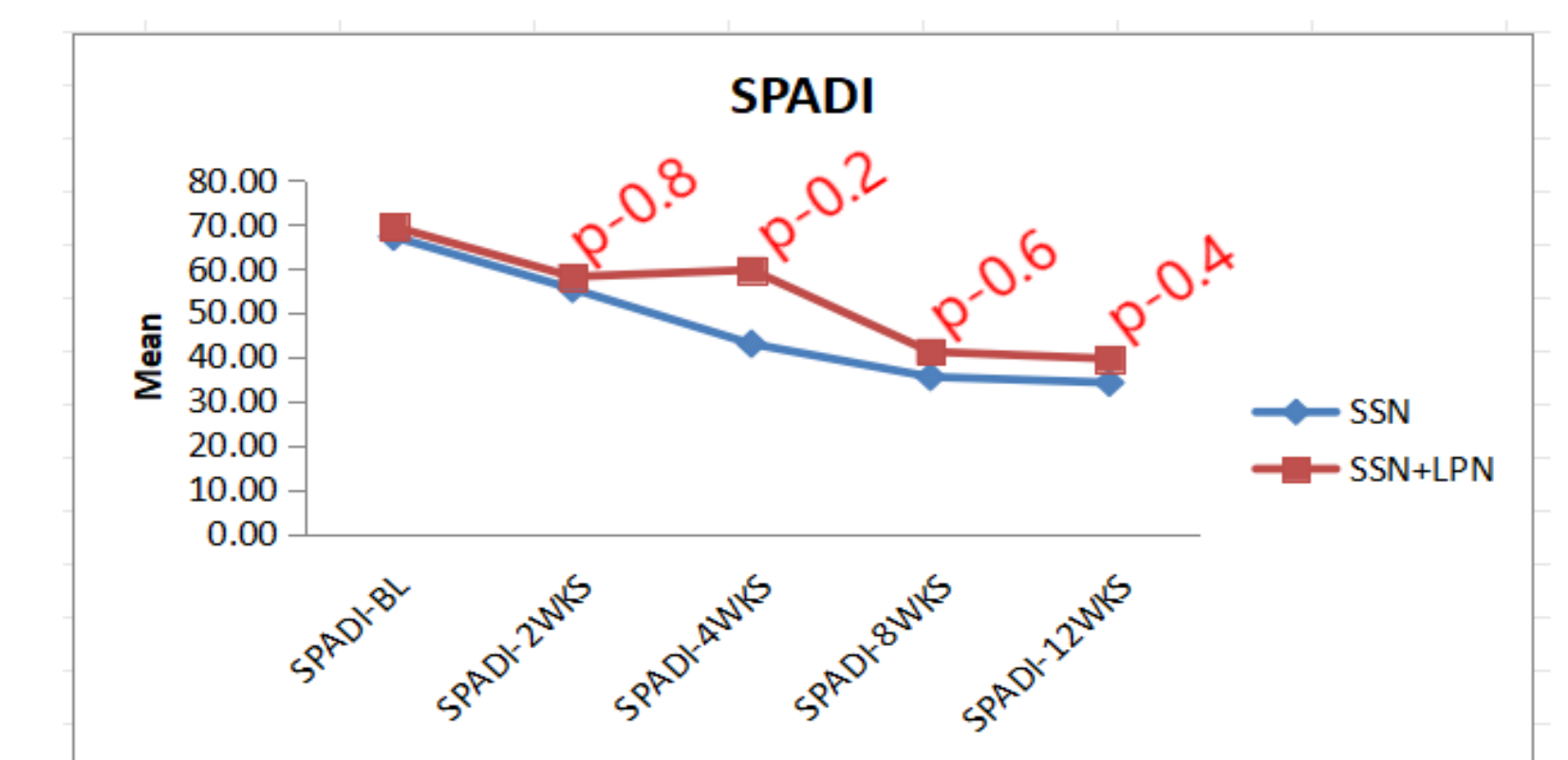


Figure 5 : EuroQoL5D5L scores at baseline

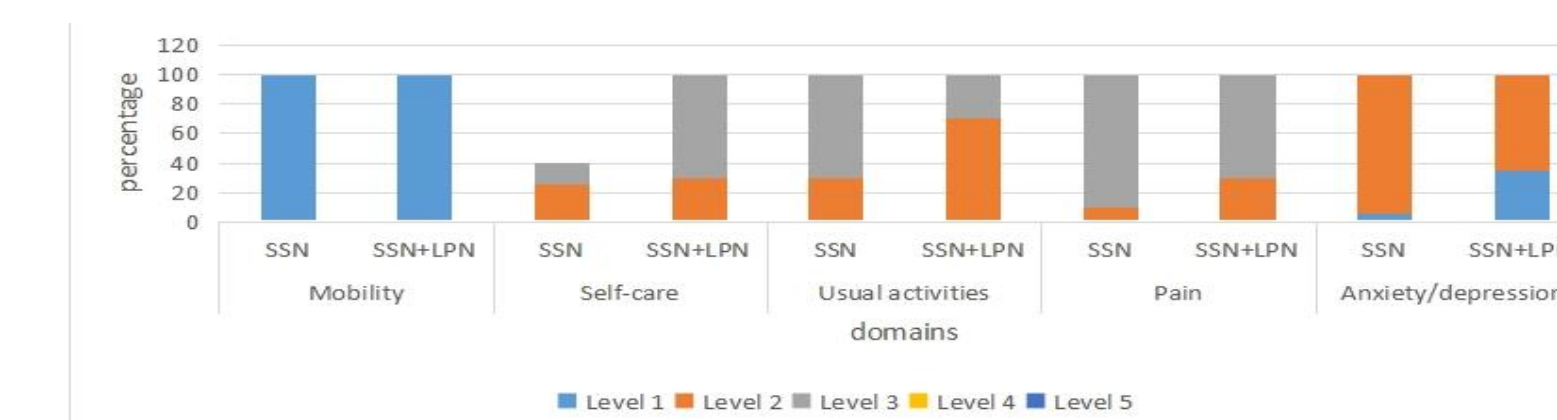
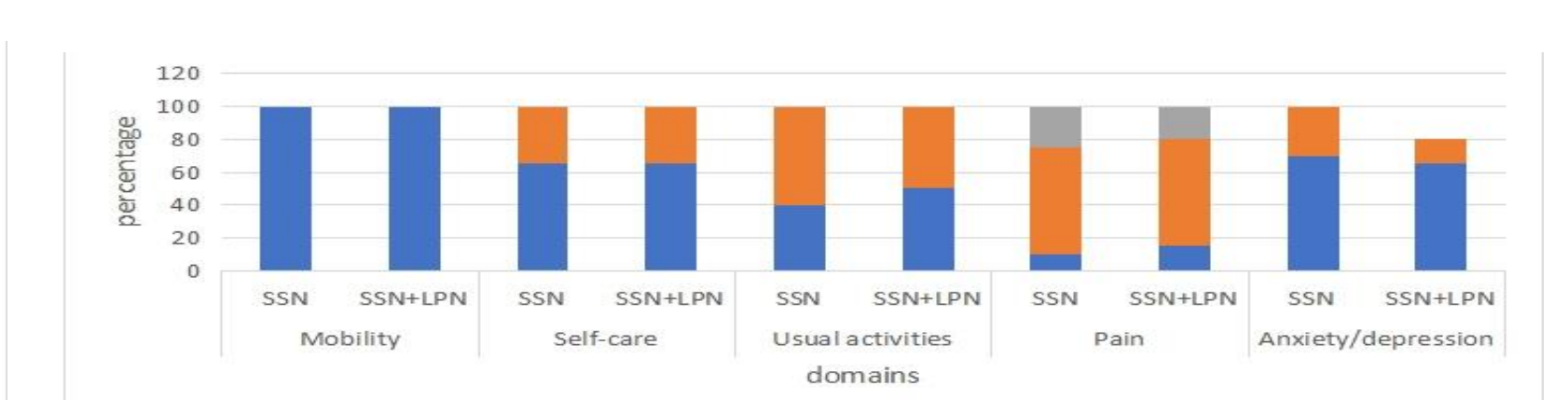


Figure 6: EroQoL5D5L at 12 weeks



Conclusion

The results of our suggests that the addition of LPN to the SSN PRF did not provide a benefit over SSN treatment alone in terms of measured outcomes. Both treatments are equally effective in managing pain over the 12-week period. A significant limitation of our study was its small sample size and short follow up of 12 weeks. Further research with large sample size is warranted.

Disclaimer: None of the authors have any conflict of interest.