



Comparative assessment of efficacy of lumbar facet joint nerve block and lumbar facet joint radiofrequency denervation in patients with low back pain

Disha Gupta, Naveen Malhotra, Anshul, Amit Kumar, Neha Sinha

Department of Anaesthesiology, Pandit Bhagwat Dayal Sharma Postgraduate Institute of Medical Sciences



BACKGROUND

- Facet joints are articulation of the superior and inferior articular processes of adjacent vertebra
- Innervation: medial branches of dorsal rami of spinal nerves from L1/4 levels
- Lumbar facet joint (LFJ) related pain is reported to have a prevalence of 15-45%.¹
- Interventional modalities:
 - Intraarticular injections & medial branch blocks
 - Medial branch radiofrequency ablation (RFA)
- Literature largely shows equivocal results with regards to efficacy of RFA over steroid blocks.

OBJECTIVES

To compare the efficacy of lumbar facet joint nerve block and lumbar facet joint radiofrequency denervation in patients with low back pain in terms of:

- Improvement in pain
- Improvement in disability
- Procedural complications

METHODS

- ✓Study design: prospective, randomized controlled study with parallel groups and 1:1 allocation
- ✓Institutional ethical committee approval obtained
- ✓Registration - CTRI/2020/11/029099
- ✓Informed written consent of patients taken

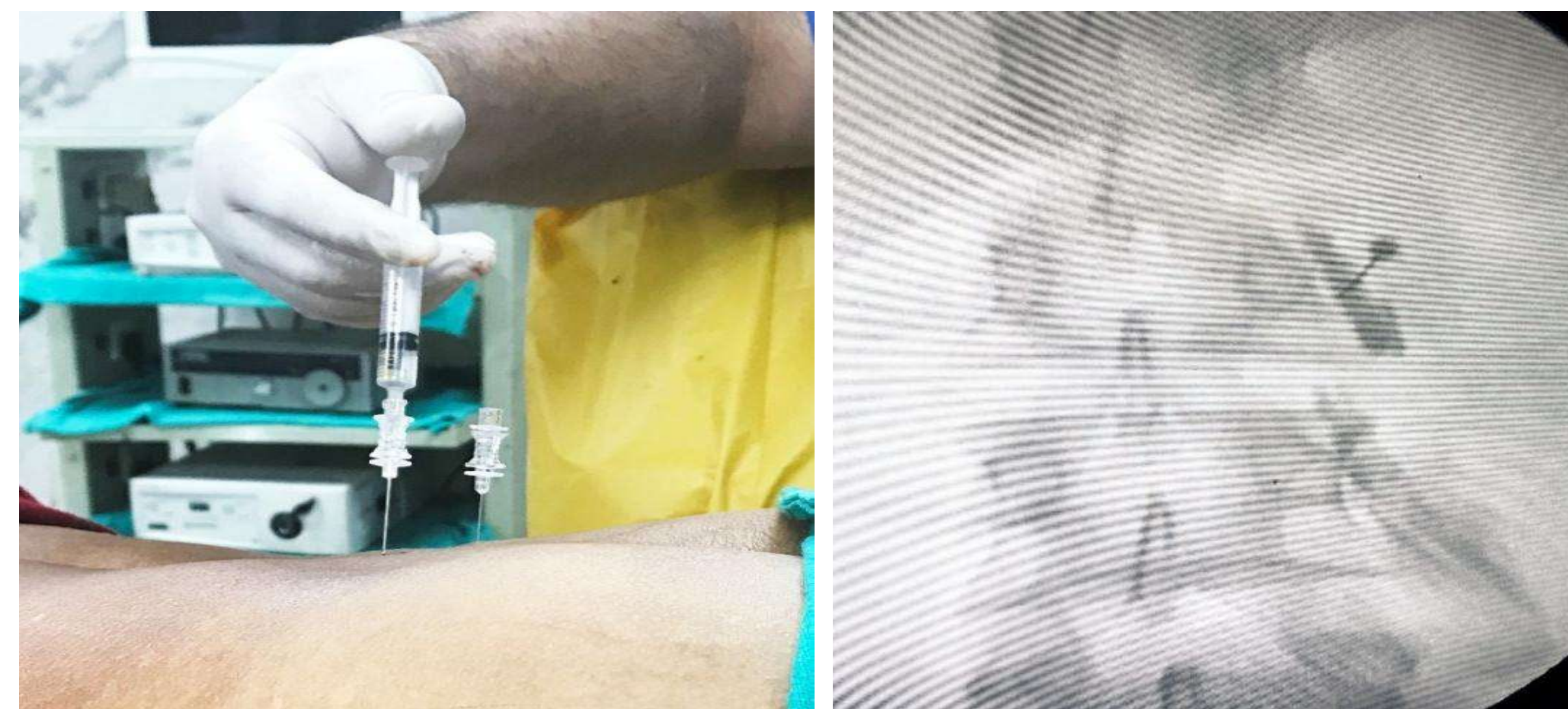
Inclusion Criteria	Exclusion Criteria
➢Age >20 years ➢History, physical examination and pain pattern consistent with LFJ pain > 3 months ➢MRI findings corresponding with the clinical symptoms ➢Failure to respond to six weeks of conservative treatment	➢Adverse reactions to local anaesthetics or steroids ➢Previous facet joint injection ➢Previous spine surgery ➢Vertebral fractures ➢Uncontrolled psychiatric or medical illnesses ➢Infection/Malignancy ➢Pregnant/lactating females

METHODS (CONT.)

Sample size: 25 per group was calculated to achieve a power of 80% and a 2-sided type I error rate of 5%.

MEDIAL BRANCH BLOCK (GROUP-1)

In Group-1, patients were administered fluoroscope guided medial branch block (MBB) with 2ml drug solution comprising of 0.25% bupivacaine plus 10mg of triamcinolone



MEDIAL BRANCH RFA (GROUP-2)

In Group-2, patients were administered fluoroscope guided medial branch radiofrequency ablation (MBRFA) at a temperature of 80°C for 90 seconds using a RF generator.² Correct placement confirmed using electro-stimulation at 50 and 2 Hz for sensory and motor function, respectively.

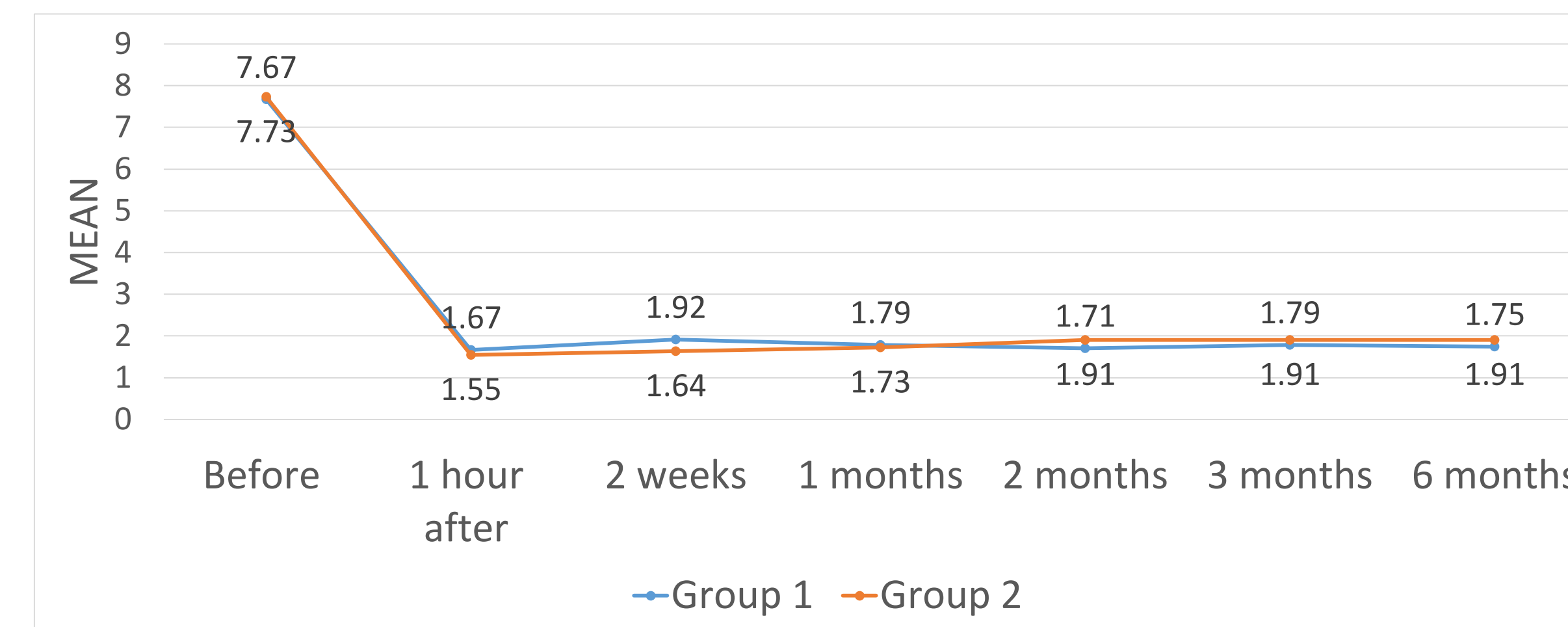


RESULTS

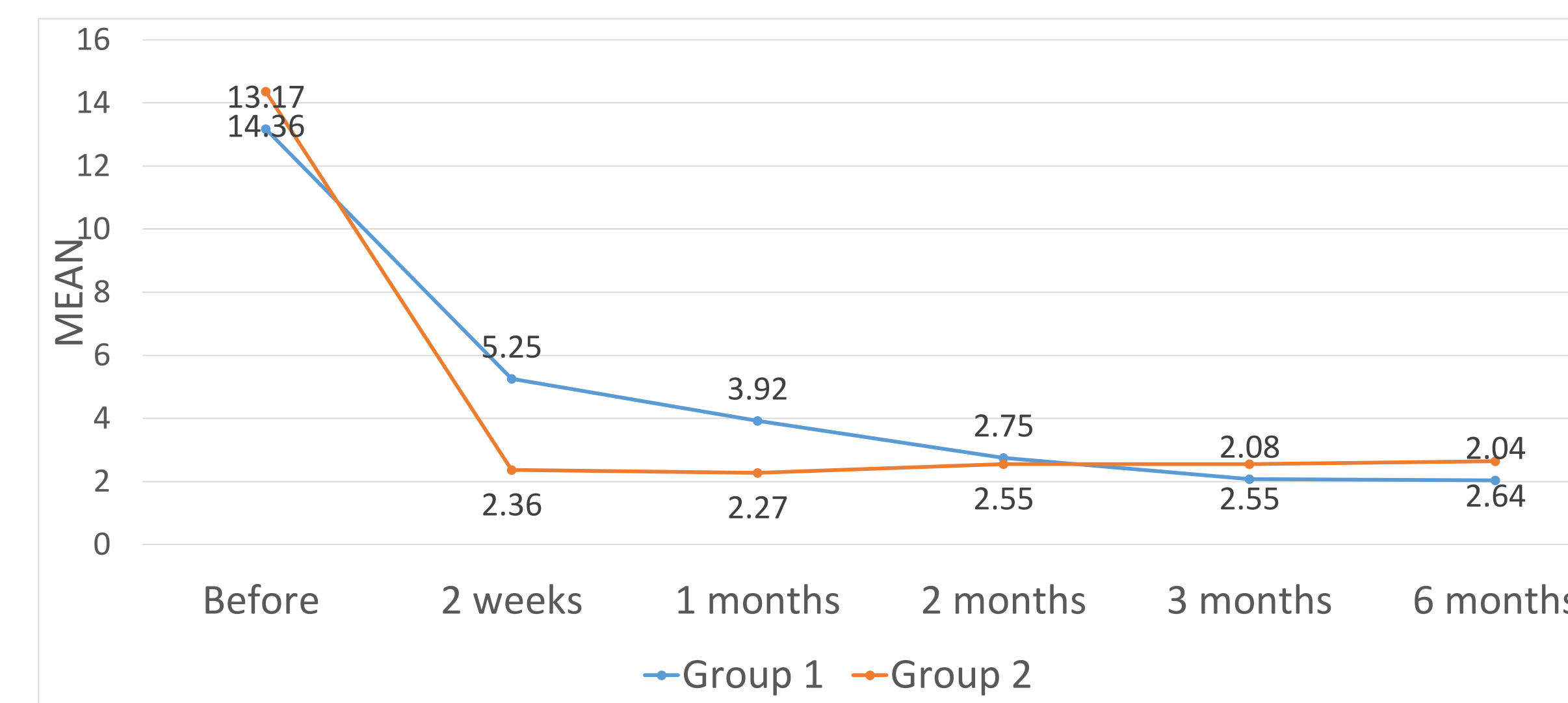
Lost to follow-up

1 patient from group-1 (n=24)

3 patients from group-2 (n=22)

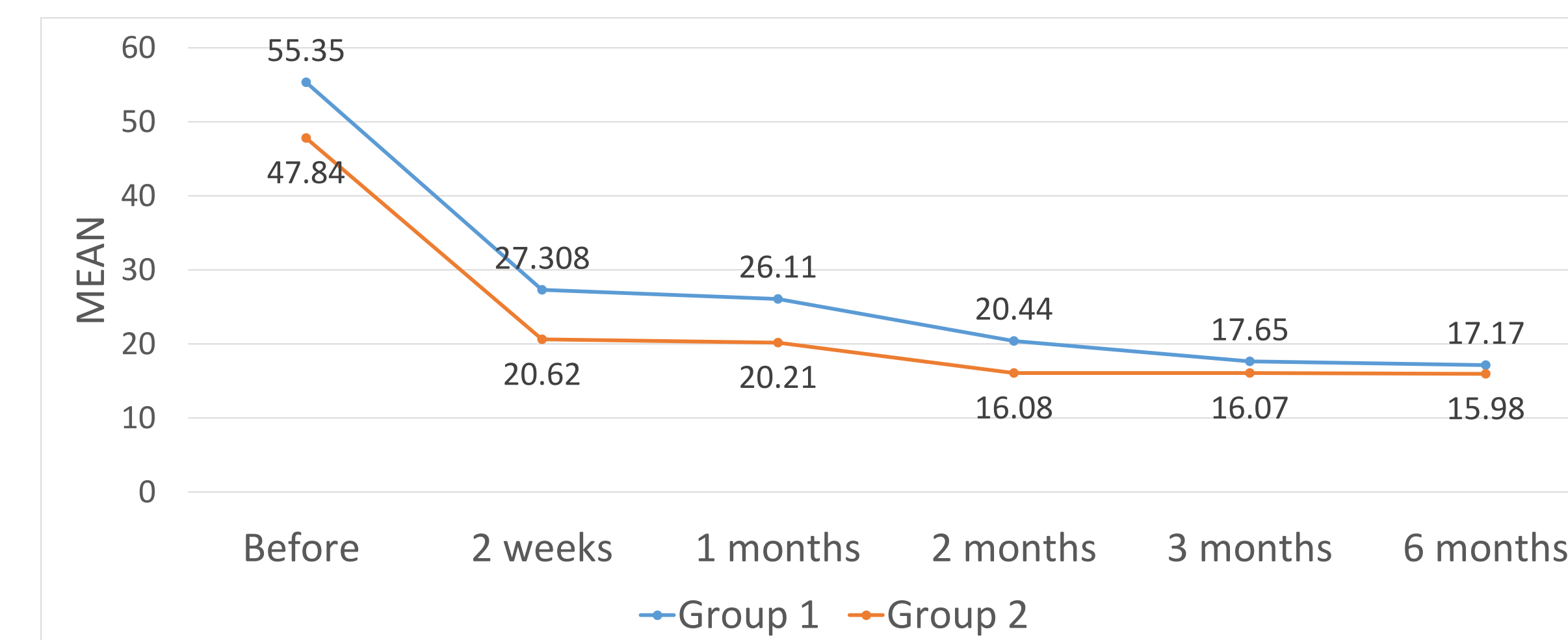


Pain Score (NRS) at Different Time Intervals in the Two Groups



RMQ Scores at Different Intervals in the Two Groups

Significant reduction in Group-2 at two weeks (p=0.003) and one month (p=0.01) interval as compared to Group-1



ODI Score (%) at Different Time Intervals in the Two Groups

Groups	Pain during Administration of the Injection/RFA			
	No Pain	Mild Pain	Moderate Pain	Severe Pain
Group 1 (n=24)	3	14	6	1
Group 2 (n=22)	13	8	1	0

Chi-square test, p=0.006

Pain during Administration of the Injection/RFA in the Two Groups

DISCUSSION

- MBB and MBRFA have been compared with Intra-articular facet joint injections.^{3,4}
- No previous studies directly comparing Lumbar Medial Branch Block with Medial Branch Radiofrequency Ablation
- In our study, Improvement in functional status as assessed by RMQ score was earlier onset in patients who were administered RFA.
- Patients reported lesser pain on administration of RFA
- Contributory factor in earlier return to function
- Study not powered to assess complications of the two techniques - A larger patient cohort needed.

CONCLUSIONS

- Both MBB and MBRFA are safe and effective techniques
- Both the techniques provide good pain relief and improvement in disability to the patients
- However, improvement in disability is early with MBRFA

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CONTACT: disha3286@gmail.com