

Comment on “Comparison of the Efficacy of Ultrasound-Guided Suprascapular Nerve Blocks and Intraarticular Corticosteroid Injections for Frozen Shoulder: A Randomized Controlled-Trial”

To THE EDITOR:

We recently read with great interest Lin et al's (1) article titled “Comparison of the Efficacy of Ultrasound-Guided Suprascapular Nerve Blocks and Intraarticular Corticosteroid Injections for Frozen Shoulder: A Randomized Controlled-Trial.” We would like to express our appreciation to the authors for providing clinical evidence regarding the safety and efficacy of physical therapy combined with ultrasound-guided intraarticular injection (IACI) or suprascapular nerve block (SSNB) in the treatment of frozen shoulder. The study indicated that IACI therapy demonstrates superior safety and joint mobility outcomes compared to SSNB therapy. We wish to propose a recommendation concerning the author's application of intraarticular glucocorticoid injections.

Glucocorticoid injection could significantly alleviate pain and enhance range of motion, particularly during the early stages of the condition (2). A meta-analysis assessing treatment strategies for frozen shoulder examined the efficacy of existing interventions in a cohort of 4,097 patients. The findings indicated that intraarticular glucocorticoid injection could lead to short-term improvements in shoulder external rotation and pain reduction when compared to no treatment or placebo (3). This results aligned with the recommendation of the present study to prioritize IACI as an initial approach for patients with frozen shoulder. Nonetheless, the local administration of corticosteroids may result in several adverse effects, including hyperglycemia, Cushing's syndrome, diminished bone density, and infection. It should be administered with caution in high-risk populations (such as postmenopausal women, diabetics, and those considering surgery in the near future) (4). In our prior retrospective analysis (n = 388), we observed that corticosteroid was associated with secondary hyperglycemia, extended hospital stays, and increased healthcare costs, potentially impacting the long-term prognosis in diabetic patients. In this study, patients with frozen shoulder were included, while those with neurological disorders such as stroke or peripheral neuropathy—including diabetic peripheral neuropathy—were excluded. Notably, diabetes was

not an exclusion criterion, and no significant changes in blood glucose levels were observed following the injection. It is crucial to investigate whether local corticosteroid injections in patients with frozen shoulder and diabetes might induce adverse effects such as hyperglycemia.

In our ongoing prospective pilot study, we have enrolled 18 patients with frozen shoulder comorbidity diabetes without diabetes-related complications. The patients were randomly assigned to 2 groups in a 1:1 ratio. Both groups received physical therapy in conjunction with ultrasound-guided IACI treatment, administered weekly for a total of 2 injections. While both groups followed the same physical therapy protocol, the experimental group received an IACI of 1.75 mg compound betamethasone, whereas the control group received an injection of 3.5 mg compound betamethasone. There was no statistically significant difference in the change in visual analog scale (VAS) pain scores between the 2 groups before and after treatment ($P > 0.05$). However, the experimental group exhibited a smaller change in fasting blood glucose and 2 hour postprandial blood glucose levels compared to the control group on days one, 3, and 5 following the treatment ($P < 0.05$) (Table 1).

These findings suggest that low-dose corticosteroid therapy might be effective for the treatment of frozen shoulder in patients with diabetes with a reduced short-term impact on blood glucose levels. Therefore, low-dose corticosteroid injections for pain management in diabetic patients with comorbidities

Table 1. Comparison of blood glucose levels between groups..

Measurement	Experimental Group	Control group	P-value
Variations in VAS Scores	4.39 ± 1.69	4.45 ± 1.51	0.83
Variations in Fasting Blood Glucose	5.38 ± 2.82	7.00 ± 3.25	0.025
Variations in Blood Glucose Levels 2 Hours Postprandial	8.54 ± 4.02	10.15 ± 3.59	0.021

might be a viable option. We will continue to conduct a prospective randomized double-blind study.

Qiang Wang, MD
Department of Pain Management, West China Hospital, Sichuan University, Chengdu, Sichuan Province, P. R. China

Ling Ye, MD
Department of Pain Management, West China Hospital/West China Tianfu Hospital, Sichuan University, Chengdu, Sichuan Province, P. R. China
E-mail: zerodg hx@163.com

REFERENCES

1. Lin TY, Kuo CY, Wu NX, et al. Comparison of the efficacy of ultrasound-guided suprascapular nerve blocks and intraarticular corticosteroid injections for frozen shoulder: A randomized controlled trial. *Pain Physician* 2024; 27:415-424.
2. Karbowiak M, Holme T, Mirza M, et al. Frozen shoulder. *BMJ* 2022; 377:e068547.
3. Challoumas D, Biddle M, McLean M, Millar NL. Comparison of treatments for frozen shoulder: A systematic review and meta-analysis. *JAMA Netw Open* 2020; 3:e2029581.
4. Stout A, Friedly J, Standaert CJ. Systemic absorption and side effects of locally injected glucocorticoids. *PM R* 2019; 11:409-419.