

## In Response

### **To THE EDITOR:**

---

Thank you for providing us the opportunity to clarify our research work (1). We extend our appreciation for the all thoughtful comments received following thorough critical review of our study.

Firstly, the profound global loss of range of motion (ROM) is the hallmark of shoulder adhesive capsulitis (AC). Among various measurements, external rotation is usually the first affected (2). In our study, we utilized the active external rotation, measured by a digital goniometer, as a marker for comparison at both the baseline and post-intervention. Data from our measurements was reported in Table 1 and Figure 6 in the original article (1).

Secondly, as mentioned in the original article, the clinical staging of AC serves as a theoretical classification aimed at elucidating the pathophysiological sequence of events, rather than reflecting a specific degree of disease progression (3-5). Therefore, the stage of AC was not one of the study's inclusion criteria. All studied groups exhibited comparable baseline criteria in terms of demographics, pain intensity, shoulder functions, and ROM (1).

Thirdly, we do believe that multiple comorbidities can affect the severity of AC, rate of disease progression, and response to treatment (2,3). Consequently, all included patients were of the primary AC type after the exclusion of any disease that may precipitate secondary AC (e.g., diabetes mellitus, trauma, thyroid disease, etc.). In the original article, we stated that patients with risk factors for secondary AC were excluded from this study. Further clarification on this exclusion criteria can be found in the "Methods" section and "Figure 1" of the original article (1).

Fourthly, all included patients were referred to the pain department after the failure of conservative measures prescribed by orthopedic physicians. This con-

servative protocol included NSAIDs, paracetamol, and three physical therapy sessions per week. All patients were instructed to stop all pain medications post-intervention and only paracetamol was prescribed on demand. Moreover, we incorporated the "Shoulder Pain and Disability Index" (SPADI) as a measurement of improvement and comparison between groups as it not only reflects improvement in pain but also reflects the global functional improvement in shoulder functions and patients' quality of life (QOL) (6).

Fifthly, all patients were enrolled in a post-intervention physical therapy program developed by the physical therapy department. To minimize potential confounding variables, the physical therapy plan and post-intervention medications were standardized for all included patients.

We hope we have adequately addressed all inquiries. Once again, we express our gratitude to Dr. Sena Unver, Muhammed Zahid Sahin, Ridvan Isik, and Kemal Nas for their valuable and thoughtful comments and suggestions.

Ahmed S. Foula, MD

Department of Anesthesia and Pain Management,  
Medical Research Institute, Alexandria University,  
Alexandria, Egypt

Department of Anesthesia and Peri-Operative  
Medicine, King Fahad Specialist Hospital – Dam-  
mam, Dammam, KSA

Adel Ibrahim Hozien, MD

Department of Anesthesia and Pain Management,  
Medical Research Institute, Alexandria University,  
Alexandria, Egypt

E-mail: adelhozien@alexu.edu.eg

## REFERENCES

1. Foula AS, Sabry LS, Elmulla AF, et al. Ultrasound-guided shoulder intraarticular ozone injection versus pulsed radiofrequency application for shoulder adhesive capsulitis: A randomized controlled trial. *Pain Physician* 2023; 26:E329-E340.
2. Le HV, Lee SJ, Nazarian A, et al. Adhesive capsulitis of the shoulder: Review of pathophysiology and current clinical treatments. *Shoulder Elbow* 2017; 9:75-84.
3. Date A, Rahman L. Frozen shoulder: overview of clinical presentation and review of the current evidence base for management strategies. *Future Sci OA* 2020; 6:FSO647.
4. Eljabu W, Klinger HM, von Knoch M. Prognostic factors and therapeutic options for treatment of frozen shoulder: A systematic review. *Arch Orthop Trauma Surg* 2016; 136:1-7.
5. Neviasser AS, Neviasser RJ. Adhesive capsulitis of the shoulder. *J Am Acad Orthop Surg* 2011; 19:536-542.
6. Angst F, Schwyzer HK, Aeschlimann A, et al. Measures of adult shoulder function: Disabilities of the Arm, Shoulder, and Hand Questionnaire (DASH) and its short version (QuickDASH), Shoulder Pain and Disability Index (SPADI), American Shoulder and Elbow Surgeons (ASES) Society standardized shoulder assessment form, Constant (Murley) Score (CS), Simple Shoulder Test (SST), Oxford Shoulder Score (OSS), Shoulder Disability Questionnaire (SDQ), and Western Ontario Shoulder Instability Index (WOSI). *Arthritis Care Res (Hoboken)* 2011; 63:S174-S188.