



## Editorial



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Management of Preoperative Neurological  
Deficits in Metastatic Spine Disease:  
Results From the EPOSO Study” via  
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# Commentary on “Steroids in the Management of Preoperative Neurological Deficits in Metastatic Spine Disease: Results From the EPOSO Study”

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Despite steroids being commonly used in practice, the evidence regarding the role of corticosteroid use in spine oncology is limited. In this study,<sup>1</sup> investigators from the AO Knowledge Forum Tumor describe the effect of corticosteroid use on preoperative neurological function in 30 patients with metastatic epidural spinal cord compression who underwent surgery between 2013–2017 from an international, multicenter, observational prospective cohort. The majority of patients had thoracic spine metastases (90%) followed by lumbar (33%). The most common American Spinal Injury Association score at baseline was D in 18 patients (60%) followed by E in 9 patients (30%). There was one patient in each of the A, B, and C categories. The authors found that length of steroid use did not correlate with improved or stabilized neurological function. Stabilization or improvement of preoperative neurologic function occurred in 50% of patients and postoperative adverse events occurred in 60% of patients. The authors report no statistical benefit to use of steroids in their cohort.

Given the potential deleterious impact of epidural spinal cord compression on neurologic function and ambulation, surgeons are often faced with urgent and emergent considerations for operative intervention. Many surgeons would agree that in such settings, the timing of surgery depends on a number of factors including the presence of neurologic deficits (if any), the time course of symptom evolution, the availability of surgical resources, the overall burden of systemic disease, frailty, prognosis, goals, and expectations of the patient. Given the wide spectrum of clinical presentations with metastatic epidural spinal cord compression, there remains clinical equipoise regarding the role of initiating steroids while planning surgery. This heterogeneity is what makes studying the impact of steroids so challenging. Questions remain regarding: duration, dose, timing, and adverse effects. Many times, patients are started on steroids reflexively based on the severity of magnetic resonance imaging findings such as high Bilsky grade, circumferential epidural spinal cord compression, pathological fracture with bony retropulsion, or T2 signal change within the spinal cord, but each of these may represent different considerations for the efficacy of steroids and associated outcomes.

For neurologically intact patients with preserved ambulation, is there a role for steroids

in this setting? If not for stabilizing preoperative function, then is there a postoperative benefit? If there is a postoperative benefit, then what is the optimal dosing, duration, and taper schedule? For patients who present with neurologic deficits, is it the time to surgery or the steroids that have the greatest impact on neurologic recovery? These are some of the questions we often ask ourselves, yet do not have the answers. As seen in the tables provided, this study is not sufficiently powered to address these knowledge gaps.

In this study, the investigators sought to retrospectively determine the impact of preoperative steroids on neurologic function prior to surgery from a sampling of patients enrolled across various centers in their prospective observational study. The variability in steroid treatment dose and duration speaks to the practical uncertainty that exists and the need for study. For example, dexamethasone was typically administered either orally or intravenously with a loading dose 10 mg, followed by 2 to 4 mg every 6 hours. Most of the patients were treated with steroids for 1 to 7 days (56.7%) prior to surgery, whereas 30% were treated for 8 to 14 days. Considering that many of these patients may have had prior treatment with steroids or are immune compromised due to either cancer status or ongoing systemic

therapies, the physiologic milieu is important to consider in future studies. Interestingly, in half of the patients, neurological function continued to deteriorate while on steroids prior to surgery, which ranged from 1 to 14 days.

Despite the limitations of the study which the authors have acknowledged, this study is novel and valuable in the sense that it effectively articulates and reveals the practical challenges spine surgeons face globally with regard to preoperative management considerations for these patients in absence of evidence-based guidelines. Though no definitive conclusions can be drawn from the observational data, the authors take a great step forward by highlighting key questions and controversies that should stimulate discussion and prospective study.

**Conflict of Interest:** The author has nothing to disclose.

## REFERENCE

1. Versteeg AL, Elkaim LM, Sahgal A, et al. Steroids in the management of preoperative neurological deficits in metastatic spine disease: results from the EPOSO study. *Neurospine* 2022;19:43-50.



Title: Chicago Picasso  
Artist: Pablo Picasso  
Year: 1962-64  
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