



Therapeutic Utilization Of Medial Branch Block After Lumbar Vertebral Compression Fracture: A Retrospective Outcomes Review

Maria Cecilia Guerrero, DO¹, Anthony Reyes, MD², Bhargavi Madhu, DO¹, Francesco Maoli, MD², Shiva Nuti³, Anusha Pasupuleti, MD¹, Roshan Santhosh, DO¹

1 Department of Physical Medicine & Rehabilitation, Larkin Community Hospital, South Miami, Florida

2 Department of Physical Medicine & Rehabilitation, Rush University Medical Center, Chicago, Illinois

3 John Sealy School of Medicine at The University of Texas Medical Branch, Galveston, Texas



INTRO

- With the aging population, the incidence of vertebral compression fractures (VCFs) rose to 8.6 million cases globally in 2019, resulting in long-term pain, functional decline, and increased morbidity and mortality
- Medial branch blocks (MBBs) can provide significant pain relief for refractory axial back pain post vertebral augmentation (VA), likely from the mitigation of pain from increased posterior mechanical load on facet joints due to vertebral height loss.
- MBBs may have utility in the early management of acute VCF to improve pain control

METHODS

- Propensity score matched case-control study using TriNetX, a federated open-source database housing de-identified patient data
- Query: 3 month outcomes in patients who received lumbar MBBs within 6 weeks of a lumbar VCF vs those treated with standard of care
- 2,265 patients in each cohort post propensity score matching
- Primary outcomes investigated included all-cause mortality, rates of kyphoplasty, utilization of opioids, rates of acute falls, and utilization of osteoporosis treatments such as bisphosphonates and denosumab

RESULTS

Outcomes	MBB After VCF	VCF Control	P-Value
3 Month Mortality	1.1%	3.2%	< .0001
Kyphoplasty	2.1%	5.0%	< .0001
Falls	2.7%	5.8%	< .0001
Opioid Medication	32.4%	42.3%	< .0001
Bisphosphonates	5.7%	5.3%	0.56
Denosumab	2.2%	2.3%	0.92

Patients who received a Medial Branch Block

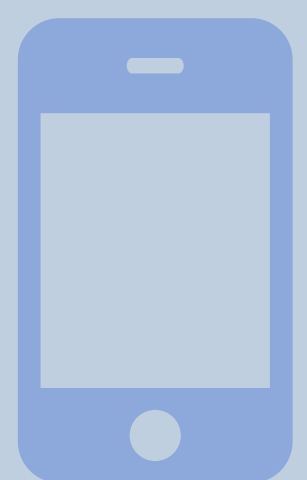
within 6 weeks following VCF had a

67% lower all-cause mortality and

57.5% lower kyphoplasty rates

when matched for age, race, gender, and various

comorbid conditions



Take a picture to
view the full abstract



REFERENCES



COHORT CHARACTERISTICS

Characteristic Name	VCF + MBB	VCF Control
Current Age	73.4±13.9	74.1±13.3
Age at Time of VCF	69.6±14.4	70.4±13.8
Female	60.35%	60.84%
Male	36.95%	36.20%
White	85.56%	85.21%
Black or African American	3.62%	4.19%
Asian	1.99%	1.68%
Lumbar spondylosis	70.99%	71.61%
Chronic pain	57.40%	60.31%
Spinal stenosis, lumbar region	41.50%	42.69%
Osteoporosis without current pathological fracture	31.35%	30.95%
Radiculopathy, lumbar region	29.54%	31.61%
Previous Hx of Lumbar Spine Surgery	21.50%	20.75%
Diabetes mellitus	20.53%	23.18%
Overweight and obesity	18.68%	19.29%
Atherosclerotic heart disease of native coronary artery	16.91%	18.85%
Repeated falls	3.89%	4.33%
Tobacco use	3.44%	3.36%
Parkinson's disease	3.31%	3.00%
Malignant (primary) neoplasm, unspecified	1.59%	1.72%

DISCUSSION

- Our analysis reveals low utilization rates of osteoporosis treatments among both cohorts, highlighting a gap in comprehensive management
- MBBs were associated with improved pain control, lower rates of falls, reduced opioid utilization, lower mortality, and lower rates of VA in this analysis
- These preliminary findings suggest that future RCTs should investigate the clinical utility of early MBB in patients with **stable** VCF
- Comparable rates of risk reduction in mortality, kyphoplasty, and falls were noted in a similar analysis observing 12 month outcomes with the same cohort
- Although VA procedures have good safety profiles and strong clinical efficacy, we should critically evaluate whether there may be a role for MBB in the acute management of VCF