

## ESR and CRP Testing May not be Useful in Monitoring Patients with Native Vertebral Osteomyelitis

Abigail Heilenman

Amy Slenker MD

Lehigh Valley Health Network, amy\_k.slenker@lvhn.org

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# ESR and CRP Testing May not Be Useful for Monitoring Patients with Native Vertebral Osteomyelitis

Abigail Heilenman, Amy Slenker MD

## Introduction

- Native vertebral osteomyelitis (NVO) is a dangerous illness that can cause permanent spinal cord injury or septicemia
- Often caused by a single bacterial pathogen and treated with antibiotics
- Patients present with back pain and fever
- Treatment monitored by ESR and CRP which are both systemic inflammatory markers

## Methods and Objectives

Retrospective chart review of all patients from 8/1/2015 to 12/31/2019 that fit inclusion criteria for the study

Inclusion criteria: admitted to LVH-CC or LVH-M, diagnosed with NVO, ESR and CRP testing performed concurrently, discharged on antimicrobial therapy

Collect patient data into REDCAP database (n=53)

Determine if there is utility in conducting inflammatory tests

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## Results

Average Age	66		Types of Osteomyelitis *	Lumbar spine	34 (64.2)
Gender	Male	37 (69.8)		Thoracic spine	17 (32.1)
	Female	16 (30.2)		Cervical spine	11 (20.8)
Race	White or Caucasian	46 (86.6)		Sacral or Iliac spine	5 (9.4)
	Black or African American	1 (1.9)		Coccyx	0 (0)
	Asian	0 (0)		Number of Tests Performed	CRP
	Multi-racial	0 (0)	ESR		184 (52)
	Other	1 (1.9)	*% will not equal 100% as patients can have multiple levels involved		
	Patient declined or refused	1 (1.9)			
Unknown	1 (1.9)				
Missing or Unavailable	3 (5.7)				

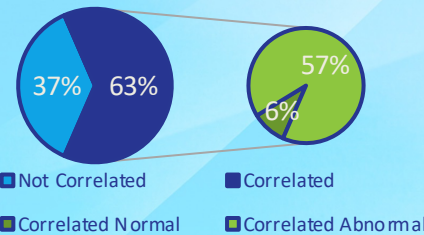


Figure 1: Results for Concurrent Testing

~Combined Endpoint of Treatment Failure was defined as treatment failure, 90-day attributable readmission, or 90-day attributable mortality

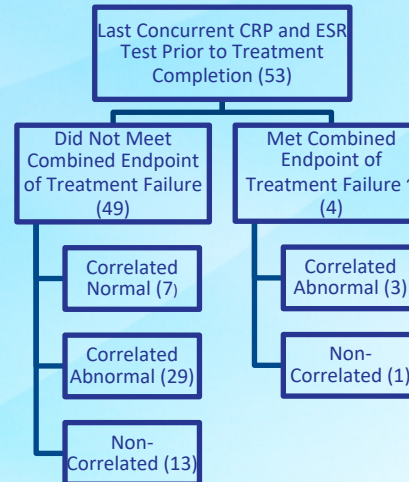


Figure 2: Last Marker Testing Completed for Patient

## Discussion

- 355 total inflammatory marker tests were performed of which ESR and CRP were correlated only 63% of the time
- 4 patients met the combined endpoint of treatment failure; 3 of the 4 had correlated abnormal ESR and CRP results and 1 of 4 had non-correlated results prior to completion of antibiotics
- Of the 49 patients who did not meet the combined endpoint of treatment failure, 29 had correlated abnormal results prior to completion of antibiotics

## Conclusion

- ESR and CRP testing may not be useful for monitoring NVO; patients who had treatment failure and treatment success had abnormal monitoring tests just prior to completion of therapy
- More data is needed as well as a robust statistical analysis

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