

The Utility of CRP Monitoring in the Treatment of Subacute Effusive Constrictive Pericarditis



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Introduction

Effusive constrictive pericarditis (ECP) is defined as having constrictive hemodynamics that persists after alleviation of tamponade physiology. Historically, the management of ECP has been based on clinical response. We present a case of effusive constrictive pericarditis and propose the use of C-reactive protein (CRP) monitoring for guiding treatment duration and monitoring response in cases of ECP.

Case Presentation

A 42-year-old male presented to the emergency department with chest pain, shortness of breath, tachycardia, and fevers after a recent diagnosis and treatment for acute pericarditis, including pericardiocentesis. Labs showed an elevated CRP (Image 2). TTE showed evidence of effusive constrictive pericarditis (Image 4). He was treated with Methylprednisolone and Colchicine and symptoms improved. He was discharged on a prednisone taper. At follow up, the patient remained asymptomatic; CRP values were decreasing. By week five of prednisone taper, CRP increased, but he remained asymptomatic. Due to the CRP elevation, prednisone was increased. A week later, he developed pleuritic chest pain and SOB. ECG showed evidence of pericarditis, and TTE showed evidence of continued constrictive pericarditis (Image 1). After increasing prednisone, CRP levels and symptoms decreased (Image 3). Prednisone was tapered more slowly than the first taper, with continued weekly CRP monitoring , without recurrence of symptoms or evidence of pericarditis by TTE or CMR (Image 5).

Figures

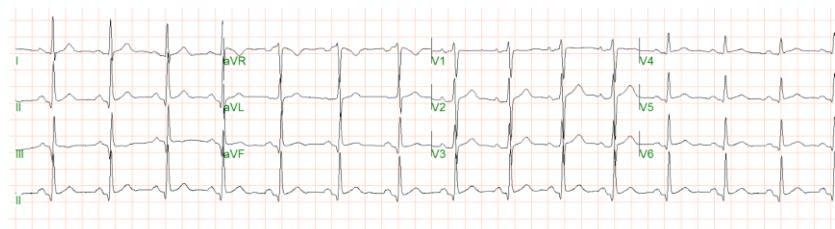


Image 1. ECG on week five of prednisone taper after patient's recurrence of symptoms, showing diffuse PR depression and ST elevation, which shows evidence of pericarditis.

CRP	
Latest Ref Range:	<= 7.48 mg/L
Admission	82.80 ▲
	206.50 ▲
Discharge	220.50 ▲
	205.63 ▲
	151.22 ▲
	15.11 ▲
	8.77 ▲

Image 2. CRP values during hospitalization, peaking at 220 on admission (star) and down trending by discharge (cross).

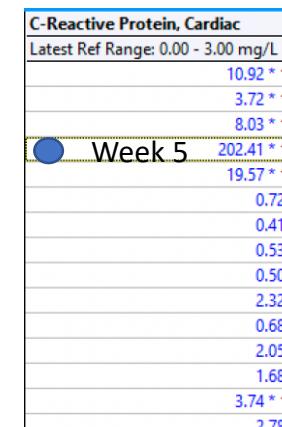


Image 3. CRP values after discharge, showing an increase in CRP to 202 (circle) on week 5 of prednisone taper followed by a decline in CRP after dose adjustment.

Discussion

Inflammatory markers, such as CRP, have been suggested as a tool for guiding treatment length and monitoring treatment response in pericarditis. However, specific guidelines for the use of these markers or frequency of monitoring do not exist for cases of effusive constrictive pericarditis. In our case, weekly CRP monitoring helped predict disease flares and guide medication adjustments even prior to the onset of clinical symptoms or ECG/echo changes. Therefore, this case demonstrates that weekly CRP assessment can be successfully used to help direct treatment in effusive – constrictive pericarditis.

Conclusion

- The duration of treatment in ECP has historically been based on individual clinical response.
- Weekly CRP monitoring can be used to help direct treatment length in ECP.

References

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Image 4. TTE Pre-treatment. Videos show prominent septal bounce - suggesting constriction. Still images are pulse wave (PW) doppler of mitral and tricuspid inflows, showing significant respiratory variance of inflow velocities (>0.25 for mitral inflow and >0.4 for tricuspid inflow-cutoffs for diagnosis).

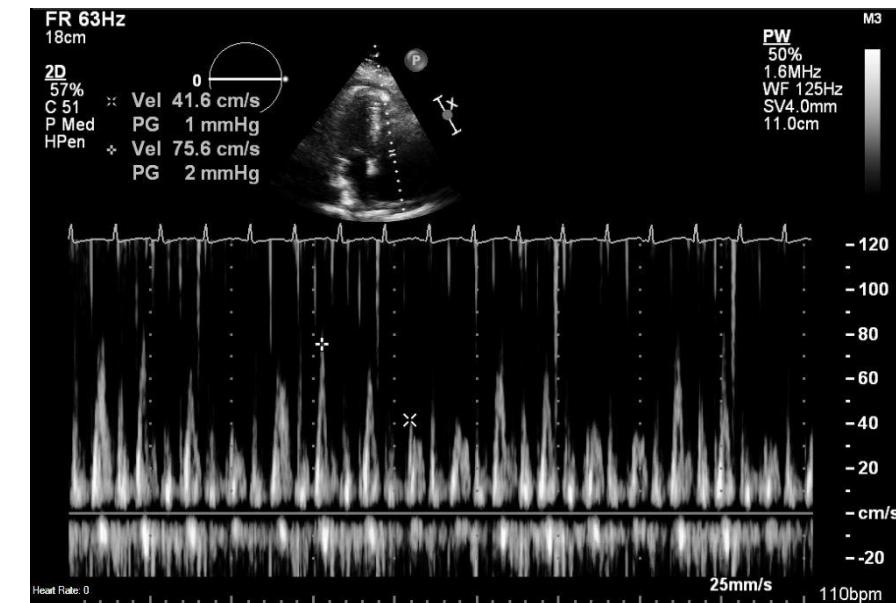
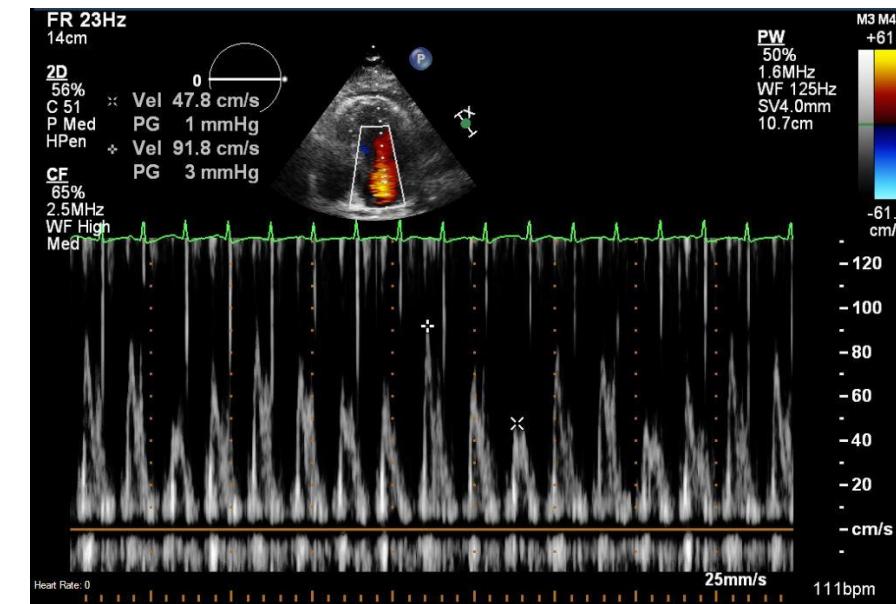
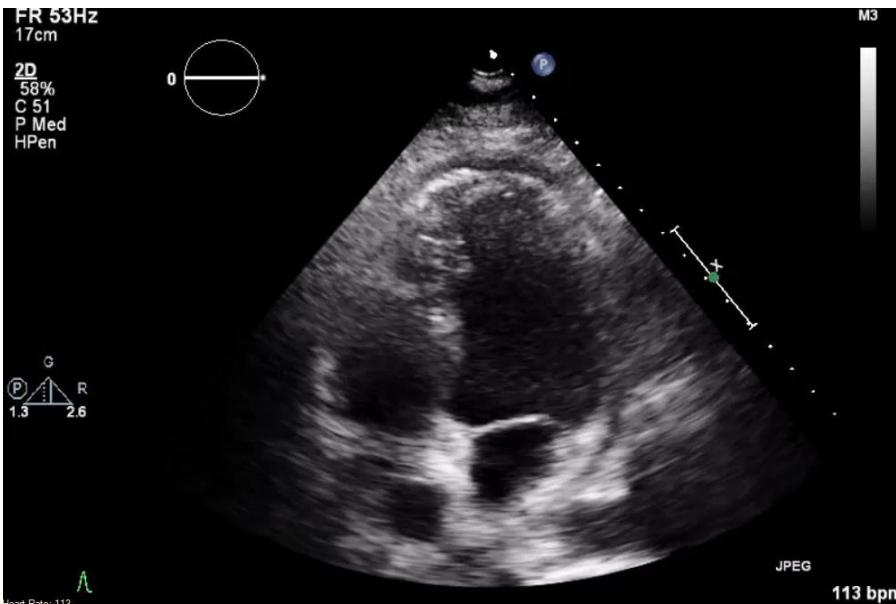


Image 5. TTE and CMR Post-treatment. Videos show resolution of septal bounce.
Still images of PW doppler of mitral and tricuspid inflows show decreased respiratory variance.

