Acute Fulminant Myocarditis

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HPI

• 27 year old Female, Vietnamese
• 1 week ago: flu-like symptoms --> 4 days ago - chest pain and dyspnea
ER

- T 36.4, HR 57, RR 16, BP 82/49, SpO2 100%
- Distressed, oriented
- Heart: normal rate, normal rhythm, no murmur, no S3 S4
- Troponin 23.6 → 21.3
- Lactic acid 3.6 → 4.5
- AST/ALT 198/100
- Telemetry: intermittent complete heart block with junctional escape rhythm/RBBB (rates 50s), prolonged QT and T wave inversion
• EKG: Complete Heart Block
• Echocardiogram: EF 25%, significant thickening of both ventricles with severely depressed function and RV dilation
• LHC: normal coronary artery
• RHC + EMBx
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA mmHg</td>
<td>18</td>
</tr>
<tr>
<td>PA mmHg</td>
<td>24/17</td>
</tr>
<tr>
<td>Mean PA mmHg</td>
<td>20</td>
</tr>
<tr>
<td>PCWP mmHg</td>
<td>17</td>
</tr>
<tr>
<td>MAP mmHg</td>
<td>60</td>
</tr>
<tr>
<td>PA saturation</td>
<td>59</td>
</tr>
<tr>
<td>Ao Saturation</td>
<td>100 (on 2L NC)</td>
</tr>
<tr>
<td>Fick CO/CI</td>
<td>2.5/1.8</td>
</tr>
<tr>
<td>TPG</td>
<td>3</td>
</tr>
<tr>
<td>PVR</td>
<td>&lt;1 WU</td>
</tr>
<tr>
<td>SVR</td>
<td>1344</td>
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</tbody>
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Discussion: Indications for endomyocardial biopsy?
• EMBx - lymphocytic myocarditis
• Serology – Coxasackie ab (+)
• Worsening cardiogenic shock and inadequate tissue perfusion despite IABP, high dose dopamine and vasopressin
• VA ECMO
• Cardiac tamponade → pericardial window
Discussion: What is the expected timeline of subsequent events in this situation?
• Day 6 – ECMO removal
• Echo on day 6: EF=50%
• Day 9 – Extubation
Discussion: How do you follow up this patient?
Post discharge follow up

• cMR - 3 months after discharge
• Echo – 6 months after discharge
• EF ~60%
1 Year After Discharge

- MRI: Normal left ventricular size and global and regional systolic function. \([\text{LVEDVi} = 77 \text{ mL/m}^2; \text{LVEF} = 65\%]\)
- Normal LV myocardial T2 values without MR evidence for inflammation/myocarditis.
- Normal right ventricular size and global systolic function. \([\text{RVEDVi} = 69 \text{ mL/m}^2; \text{RVEF} = 63\%]\)