Abstract: P16

**Relationship of plasma long Pentraxin-3 concentration with clinical and angiographic outcomes of patients with acute ST-segment elevation myocardial infarction undergoing primary percutaneous coronary**

**Authors:**
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**Topic(s):**
Coronary Artery Disease: Inflammation and Immunity

**Citation:**

**Background**
Inflammation has an important role for the progression of coronary plaque vulnerability to acute coronary thrombosis. Long pentraxin-3 (PTX3) is a sensitive marker of inflammation released upon exposure to primary inflammatory signals. Whether concentration of PTX3 affects coronary thrombus severity and impaired coronary flow in patients undergoing primary percutaneous coronary intervention (PCI) for ST-segment elevation myocardial infarction (STEMI) is unknown.

**Purpose**
This study sought to evaluate the relationship of plasma PTX3 concentration with coronary thrombus severity and final TIMI flow after primary PCI in patients with acute STEMI.

**Methods**
We prospectively enrolled 335 consecutive patients with acute STEMI undergoing primary PCI between 1 January 2018 and 2 August 2018. Plasma PTX3 concentrations were measured at admission by ELISA method.

**Results**
Compared to low PTX3 group (<0.33 ng/mL; N=223), patients in the high PTX3 group (= 0.33 ng/mL; N=112) had higher proportion of thrombus grade 4 and 5 on initial coronary angiogram (83% vs. 72%, p=0.03), final TIMI flow <3 (66% vs. 51%, p=0.01), incomplete ST segment resolution after primary PCI (85% vs. 72%, p=0.002) and Killip classification II-IV at entry (34.8% vs. 13%, adjusted odds ratio= 3.38, p<0.001). High PTX3 concentration was associated with an increased risk of 30-day mortality (adjusted hazard ratio= 3.41, 95% confidence interval, 1.27 to 9.11, p=0.01).

**Conclusion**
High plasma PTX3 concentration is associated with worse clinical and angiographic outcomes among patients undergoing primary PCI for STEMI. Further study is needed to elucidate whether PTX3 is a causal agent for adverse outcomes and whether therapies directed at reducing PTX3 levels are effective.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Hazard ratio (95% confidence interval)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long pentraxin-3 ≥0.33 ng/mL</td>
<td>3.41 (1.27 - 9.11)</td>
<td>0.01</td>
</tr>
<tr>
<td>Age &gt;65 years</td>
<td>0.38 (0.11 - 1.41)</td>
<td>0.15</td>
</tr>
<tr>
<td>Male gender</td>
<td>0.43 (0.13 - 1.44)</td>
<td>0.16</td>
</tr>
</tbody>
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<tbody>
<tr>
<td>Diabetes Mellitus</td>
<td>1.24 (0.44 - 3.52)</td>
<td>0.68</td>
</tr>
<tr>
<td>Hypertension</td>
<td>0.64 (0.23 - 1.80)</td>
<td>0.39</td>
</tr>
<tr>
<td>Baseline creatinine ≥1.3 mg/dL</td>
<td>4.06 (1.43 - 11.53)</td>
<td>0.009</td>
</tr>
<tr>
<td>TIMI risk score &gt; 4</td>
<td>8.31 (2.69 - 25.59)</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

Multivariable Cox regression analysis showing association between PTX3 concentration and selected confounding variables for all-cause death at 30 day.