DECREASED TELOMERE LENGTH AND INCREASED INCIDENT ACUTE MYOCARDIAL INFARCTION AMONG PATIENTS REFERRED FOR ANGIOGRAPHY FOLLOWING THE TERRORIST ATTACK ON THE UNITED STATES, SEPTEMBER 11, 2001

Poster Contributions
Poster Hall B1
Saturday, March 14, 2015, 10:00 a.m.-10:45 a.m.

Session Title: Fundamental Observations from Clinical Practice in ACS
Abstract Category: 1. Acute Coronary Syndromes: Basic
Presentation Number: 1105-091

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Background: Chromosomal telomeres progressively shorten over time, increasing the risk for age-associated diseases. Stress decreases telomere length (TL) and increases risk for acute myocardial infarction (AMI). We sought to determine whether a highly stressful event experienced by an entire cohort would affect TL and/or the incidence of AMI. For this study, we compared TL and AMI admission rates obtained before and after the terrorist attack on the United States September 11, 2001.

Methods: The study periods were 9/10/2000 - 9/10/2001 (Pre) and 9/11/2001-9/11/ 2002 (Post). TL Peripheral blood DNA obtained from sequential consenting patients (pts) at angiography. TL was measured in triplicate by multiplex quantitative PCR and reported as the ratio of TL to single gene (albumin) measurements (t/s). Incident AMI was determined for all Intermountain Healthcare facilities from the centralized electronic medical records database. Analysis used Wilcoxon rank-sum and chi-square.

Results: For telomere measurements, 65.3% of pts were male, 90.99% Caucasian, average age was 63 years. The Pre mean TL was significantly longer (Table) versus Post TL (p<0.0001). The rate of incident MI/total admissions increased from Pre (n=4766, 0.592%) to Post (n=4700) 0.62%) (p=0.025).

Conclusion: These results suggest that stress experienced on a population basis can decrease TL and increase incident AMI. Further study will be necessary to confirm these findings and determine the relatedness of these measured outcomes.

<table>
<thead>
<tr>
<th>Study Period</th>
<th>N</th>
<th>Mean (t/s)</th>
<th>Std Dev (t/s)</th>
<th>Minimum (t/s)</th>
<th>Maximum (t/s)</th>
</tr>
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<tbody>
<tr>
<td>9/10/2000 to 9/10/2001</td>
<td>779</td>
<td>0.821</td>
<td>0.271</td>
<td>0.208</td>
<td>2.82</td>
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<tr>
<td>9/11/2001 to 9/11/2002</td>
<td>1167</td>
<td>0.735</td>
<td>0.189</td>
<td>0.299</td>
<td>2.600</td>
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