International Collaboration: Acute Coronary Syndrome Symptoms in Japan

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Disclosures

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- The Institutional Review Board at each study site reviewed and approved the research.
International Collaboration

• Lessons learned
  • The culture divide
  • All medical records are not the same
  • Communication gaffes
  • Analytic challenges
  • The power of presence
Background

- Cardiovascular disease is a leading cause of death worldwide with an expected global cost of over $1 trillion by 2030.

- Cardiovascular disease is the second leading cause of death in Japan and the number of deaths from cardiovascular disease in Japan continues to rise especially in metropolitan men.
Background

- There are ethnic differences in the presentation of acute coronary syndrome (ACS).

- No English language publications were identified that reviewed symptoms in the Japanese population.

- With an increasingly global society, it is imperative that practitioners understand potential ethnic variations in symptom expression.
Purpose

• The purpose of this study was to:

  • identify common symptoms of ACS

  • identify whether fatigue was a common symptom of ACS

  • determine the prevalence of anxiety and depression in a sample of ACS patients from Japan.
Methods

• Descriptive, cross-sectional study

• Sample
  • Inclusion criteria
    • Adults ≥ 21 years, hospitalization for ACS, alert and oriented, hemodynamically stable
  • Exclusion criteria
    • Dementia, hemodialysis, active cancer or cancer treatment in the last 6 months, less than 6 months to live

• Setting
  • 2 University Medical Centers in Tokyo, Japan
Methods: Measurement

- All participants completed the:
  - ACS Symptom Checklist
  - Fatigue Symptom Inventory ($\alpha = 0.93$)
    - Clinically significant fatigue was defined as a fatigue average of $\geq 3$
    - Fatigue Interference ($\alpha = 0.92$)
  - Patient Health Questionnaire 9 ($\alpha = 0.83$)
    - Depressive symptoms (PHQ $\geq 5$)
    - Major depression (PHQ $\geq 10$)
  - Generalized Anxiety Disorder 7 ($\alpha = 0.89$)
    - Mild anxiety (GAD $\geq 5$)
    - Generalized anxiety (GAD $\geq 10$)
Results: Sample

- N = 53
- Age: 64.4 ± 11.3 years (range 42 – 91 years)
- 81.1% male
- 100% Japanese
## Results: ACS Symptoms

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Full sample N(%)</th>
<th>Men n(%)</th>
<th>Women n(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest discomfort</td>
<td>34(64)</td>
<td>27(63)</td>
<td>7(70)</td>
</tr>
<tr>
<td>Chest pressure</td>
<td>32(60)</td>
<td>27(63)</td>
<td>5(50)</td>
</tr>
<tr>
<td>Chest pain</td>
<td>30(57)</td>
<td>24(56)</td>
<td>6(60)</td>
</tr>
<tr>
<td>Sweating</td>
<td>25(47)</td>
<td>21(49)</td>
<td>4(40)</td>
</tr>
<tr>
<td>Unusual fatigue</td>
<td>24(45)</td>
<td>19(44)</td>
<td>5(50)</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>23(43)</td>
<td>18(42)</td>
<td>5(50)</td>
</tr>
<tr>
<td>Palpitations</td>
<td>16(30)</td>
<td>13(30)</td>
<td>3(30)</td>
</tr>
<tr>
<td>Nausea</td>
<td>13(25)</td>
<td>11(26)</td>
<td>2(20)</td>
</tr>
<tr>
<td>Shoulder pain</td>
<td>12(23)</td>
<td>10(23)</td>
<td>2(20)</td>
</tr>
<tr>
<td>Upper back pain</td>
<td>12(23)</td>
<td>8(19)</td>
<td>4(40)</td>
</tr>
<tr>
<td>Lightheadedness</td>
<td>11(21)</td>
<td>10(23)</td>
<td>1(10)</td>
</tr>
<tr>
<td>Arm pain</td>
<td>7(13)</td>
<td>6(14)</td>
<td>1(10)</td>
</tr>
<tr>
<td>Indigestion</td>
<td>7(13)</td>
<td>5(12)</td>
<td>2(20)</td>
</tr>
</tbody>
</table>
Results: ACS Symptoms

- Chief complaint
  - 18 participants did not report a chief complaint

- Of participants who reported a chief complaint:
  - 10 reported chest pain
  - 7 reported chest pressure
  - 5 reported chest discomfort
  - 4 reported shortness of breath
  - 3 reported lightheadedness
  - Other chief complaints included: upper back pain, palpitations, and arm pain
Results: Depression and Anxiety

- **Patient Health Questionnaire 9**
  - 45.8% of the sample reported at least mild depressive symptoms (PHQ 9 ≥ 5)
  - 22.9% of the sample reported moderate or severe depression (PHQ 9 ≥ 10)

- **Generalized Anxiety Disorder 7**
  - 33.3% of the sample reported at least mild anxiety (GAD 7 ≥ 5)
  - 13.7% of the sample reported moderate or severe anxiety (GAD 7 ≥ 10)
Results: Fatigue Symptom Inventory

- Fatigue intensity (range 0 – 10)
  - Most fatigue: 5.56 ± 2.55
  - Least fatigue: 2.58 ± 1.83
  - Average fatigue: 4.37 ± 2.18
  - 76.9% of the sample reported clinically significant fatigue (FSI average ≥ 3)

- Fatigue interference (range 0 – 10)
  - 3.68 ± 2.15

- Fatigue timing
  - Average of 3.57 ± 2.17 days per week
  - 41.5% reported no consistent pattern of fatigue
  - 26.4% reported fatigue was worse in the evening
Results: Correlations

- Average fatigue was correlated with:
  - Depression (r = 0.365; p < 0.02)
  - Anxiety (r = 0.325; p < 0.03)

- Interference from fatigue was correlated with:
  - Depression (r = 0.475; p < 0.001)
  - Anxiety (r = 0.423; p < 0.003)

- Anxiety and depression were significantly correlated (r = 0.792; p < 0.001)
Limitations

- Small, homogenous convenience sample of patients from 2 metropolitan medical centers.

- ACS Symptom Checklist and Fatigue Symptom Inventory were translated for the study and the translations were not psychometrically tested prior to the study.
Discussion

- Similar to patients in the United States, chest discomfort, chest pressure, and chest pain were reported by the majority of patients.

- Unusual fatigue and sweating were reported by a higher percentage of the sample than previously published data from the United States.

- Prevalence of anxiety and depression were higher than the reported prevalence among the Japanese population.
Discussion

- While 76.9% of the sample reported clinically meaningful fatigue, only 45% reported fatigue on the ACS symptom checklist.

- Maximum and minimum fatigue in the Japanese sample was similar to published fatigue intensity in heart failure, coronary artery disease, and ACS patients in the United States.

- Average fatigue intensity was higher in the Japanese sample than United States samples of cardiovascular disease patients and patients undergoing active cancer treatment.
Future Directions: Current Study

- Data continues to be collected for the study with this presentation providing preliminary results.

- Data is being collected in the United States in order to complete a direct comparison of patients from Japan and the United States.
Future Directions

• Larger studies which sample rural patients are needed in order to better generalize to the Japanese population.

• Continued research on fatigue as an important symptom of ACS is needed.

• Future study of depression and anxiety in ACS patients is necessary given the high prevalence in this sample compared to the general Japanese population.
Questions?

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