In-Hospital Outcomes and Hospitalizations for Acute Rheumatic Heart Disease: A United States National Study

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Background

• Acute rheumatic heart disease (ARHD) is a serious manifestation of acute rheumatic fever (ARF) and can result in long-term cardiac complications.
• Literature suggests that the incidence of ARF is declining in the United States (US).
• However, the secular variation of ARHD has not been investigated in the United States.

Methods

• Nationwide Inpatient Sample databases from 2003 through 2012 were queried for hospitalizations with a primary discharge diagnosis of ARF or ARHD using ICD-9 codes (390, 391.x, 392.x).
• Hospitalizations primarily for ARF which also had a secondary diagnosis of ARHD were identified and analyzed as a separate cohort.
• Regression analysis was used to analyze outcomes.

Results

• Hospitalizations for ARHD represented a very small proportion (0.002%) of the total hospitalizations in the US between the years 2003-2012.
• Hospitalizations primarily or secondarily for ARHD have decreased by around 50% between 2003-2012 ($P_{\text{trend}}<0.005$).
• Of the 11,186 hospitalizations for ARF (mean patient age 46±28 years; 53.8% women; 50.4% white), a primary or secondary diagnosis of ARHD was present in 6,866 (61.4%) (mean patient age 55±27 years; 57.4% women; 54.2% white). ARHD in ARF patients decreased from 63% in 2003 to 55.9% in 2012 ($P_{\text{trend}}<0.005$).
• Among patients hospitalized for ARF, the likelihood of having ARHD is increased in female sex and white race (both $P<0.005$).
• ARHD is more common (28%, $P<0.005$) in patients in the lowest quartile of median household income (US $ 1-38,999).

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2012</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitalizations for ARHD (primary and secondary)</td>
<td>1700 hospitals</td>
<td>1240 hospitals</td>
<td>$&lt; 0.005$</td>
</tr>
<tr>
<td>ARHD in patients hospitalized for ARF</td>
<td>63%</td>
<td>55.9%</td>
<td>$&lt; 0.005$</td>
</tr>
</tbody>
</table>

Conclusion

• ARHD is uncommon in the US and hospitalizations for ARHD have decreased between 2003 and 2012.
• ARHD is common in patients with ARF and is associated with an increased length of stay, hospital charges, and in-hospital mortality.
• More aggressive preventive interventions in low-income areas might help further reduce the burden of this disease.

Disclosures

• None of the authors have any relevant disclosures.

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