

Spring 3-3-2017

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

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Recommended Citation

Yandrapalli, S., Sanaani, A., Solangi, Z., Shehu, M., Sule, S., & Aronow, W. S. (2017). In-Hospital Outcomes and Hospitalizations for Acute Rheumatic Heart Disease: A United States National Study. Retrieved from https://touro scholar.touro.edu/nymc_fac_posters/33

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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 ($P_{trend} < 0.005$).
- 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 ($P_{trend} < 0.005$).**
- 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)**.

	2003	2012	
Hospitalizations for ARHD (primary and secondary)	1700 hospitalizations	1240 hospitalizations	$P < 0.005$
ARHD in patients hospitalized for ARF	63%	55.9%	$P < 0.005$

Results

Among patients hospitalized for ARF, **ARHD is an independent predictor of increased length of stay** (8.4 ± 9.9 vs 6.8 ± 8.5 days in patients with and without ARHD, respectively, $P < 0.005$), **increased total hospital charges** (US \$ $62,926 \pm 107,516$ vs $46,482 \pm 88,796$, $P < 0.005$), and **increased in-hospital mortality** (4.7% vs 3% in patients with and without ARHD, respectively, $P < 0.005$).

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.