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Original Article

Changes in Atrial Fibrillation Admissions Following Daylight Saving Time Transitions

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Highlights

- Atrial fibrillation admission rates change following daylight-saving time transitions.
- **This trend was found following the Spring daylight-saving time transition.**
- **It was not found following the Autumn daylight-saving time transition.**
- This trend persisted among women after separating by gender, but not men.

Abstract

Background

Daylight saving time (DST) imposes a twice-yearly hour shift. The transitions to and from DST are associated with decreases in sleep quality and environmental hazards. Detrimental health effects include increased incidence of acute myocardial infarction following the springtime transition and increased ischemic stroke following both DST transitions. Conditions effecting sleep are known to provoke atrial fibrillation (AF), however the effect of DST transitions on AF are unknown.

Methods

Admitted patients aged 18 to 100 with primary ICD9 code of AF between 2009 and 2016 were included. The number of admissions were compiled and means were compared for the Monday to Thursday period and the entire seven day interval following each DST transition and the entire year for the entire cohort and separated by gender. Significance was determined with Wilcoxon nonparametric tests.

Results

Admission data for 6089 patients were included, with mean age of 68 years and 53% female. A significant increase was found in mean AF admissions over the Monday to Thursday period (3.09 vs 2.47 admissions/day [adm/d], $P = 0.017$) and entire week (2.48 vs 2.09 adm/d, $P = 0.025$) following the DST spring transition compared to the yearly mean. When separated by gender, women exhibited an increase in AF admissions following the DST spring transition (1.78 vs 1.28 adm/d for Monday to Thursday period, $P = 0.036$ and 1.38 vs 1.11 adm/d for entire week, $P = 0.050$) while a non-significant increase was seen in men. **No significant differences were found following the autumn transition** for the entire cohort or when separated by gender.

Conclusion

An increase in AF hospital admissions was found following the DST springtime transition. When separated by gender, this finding persisted only among women. This finding adds to evidence of negative health effects associated with DST transitions and factors that contribute to AF episodes.

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