Abstract Title: Daylight Saving Time Transitions, Incidence and In-hospital Mortality of Ischemic Stroke

Press Release Title: Daylight Saving Time and Stroke

Objective: To study the effects of Daylight Saving Time (DST) transitions on the incidence of ischemic stroke.

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Background: Circadian rhythm disruption has been associated with increased risk of IS. DST transitions disrupt circadian rhythms and have been shown to shift the pattern of diurnal variation in stroke onset, but effects on the overall incidence of IS are unclear.

Design/Methods: We studied the effects of DST transitions on stroke hospitalizations and in-hospital mortality nationwide in Finland in 2004-2013. Incidence ratios (IR) during the week following DST transition (study group, n = 3033) were compared to expected incidences (control group, n = 11801), calculated as the mean incidence during two weeks prior to and two weeks after the index week.

Results: Incidence of IS was increased during the first two days (IR 1.08; CI 1.01-1.15; P=0.020) after transition, but difference was diluted when observing the whole week (IR 1.03; 0.99-1.06; P=0.069). Weekday specific increase was observed on second day (Monday; IR 1.09; CI 1.00-1.90; P=0.023) and fifth day (Thursday; IR 1.11; CI 1.01-1.21; P=0.016) after transition. Women were more susceptible to temporal changes after DST transitions compared to men, but there was no difference in overall risk of IS between genders. Increased risk was seen for patients with malignancy (RR 1.25; CI 1.00-1.56; P=0.047), and advanced age (>65 years) on the first two days (RR 1.20; CI 1.04-1.38; P 0.020) and on the second day (RR 1.23; CI 1.03-1.47; P=0.021) after DST transition. DST transition did not affect in-hospital mortality.

Conclusion: DST transitions are associated with an increased incidence of ischemic stroke during the first two days after transitions. There may be age or gender-based differences in the effect of DST transitions, but this is not reflected in the overall incidence of IS.

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