

Background

Temporal patterns in the occurrence of diseases, have been a subject of interest in several studies during recent years. Rhythms of about seven days and ischemic cerebrovascular events have been linked, but generally with some discrepancies in results, making the conclusion unclear.

Material and methods

11,250 consecutive stroke events registered in the FINMONICA areas: provinces of Kuopio and North Karelia, in eastern Finland and city of Turku and Loimaa area, in western Finland.

Age range: 25-99 years

Thrombotic and embolic strokes were combined to form the category of ischemic stroke.

Data for the period 1983-1991 were pooled and divided to seven days of the week. Chi-square tests, Poisson regression models and cosinor analysis were used for the statistical analyses.

Aim

To examine the onset, mortality and case-fatality of ischemic strokes by the day of the week.

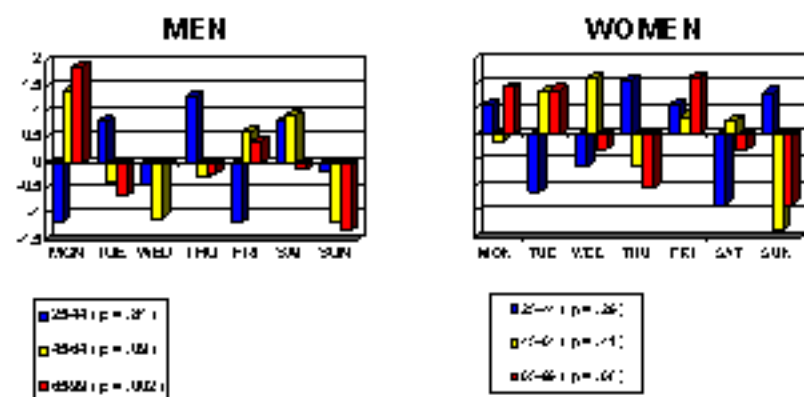
Results

CHARACTERISTICS OF STUDY POPULATION

(n = 11,250)

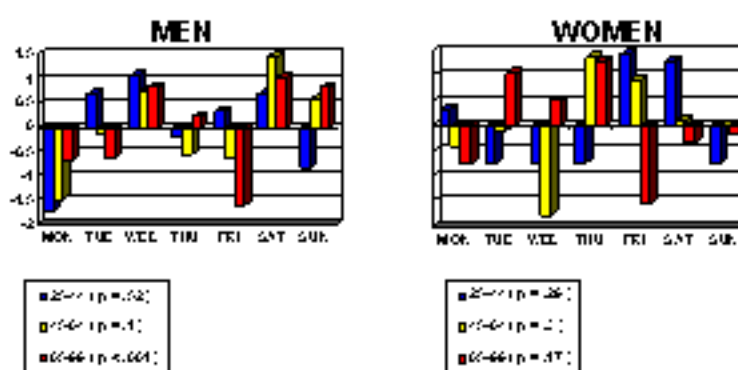
AGE-GROUP	MEN		WOMEN	
	ONSET N	FATAL N	ONSET N	FATAL N
25-44	229	14	102	4
45-64	2169	248	1054	147
65-99	3109	700	4587	1163
TOTAL	5507	962	5743	1314

ONSET OF ISCHEMIC STROKES BY DAY OF THE WEEK



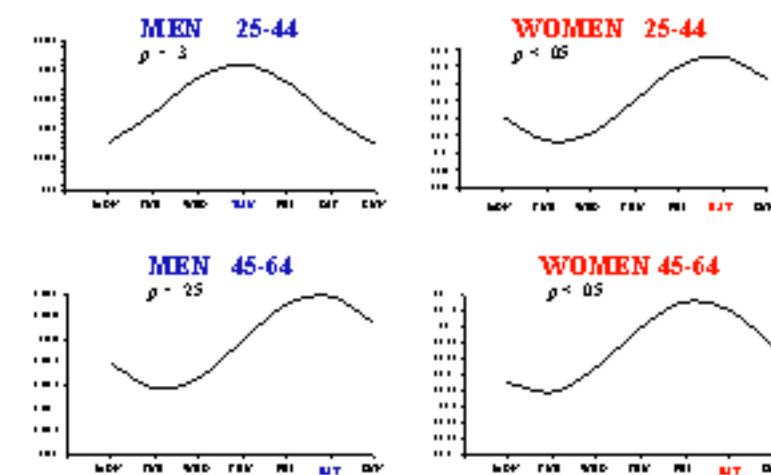
* ADJUSTED FOR THE AGE GROUP SPECIFIC AVERAGE

28 - DAY CASE - FATALITY OF ISCHEMIC STROKES BY DAY OF THE WEEK AND AGE-GROUP



* ADJUSTED FOR THE AGE GROUP SPECIFIC AVERAGE

28 - DAY CASE - FATALITY OF ISCHEMIC STROKES COSINOR ANALYSIS



Summary

- THE RESULTS SHOWED THAT ISCHEMIC STROKES HAVE A PEAK IN THE BEGINNING OF THE WEEK IN BOTH GENDERS.
- AN EXCESS OF 23% (95% CONFIDENCE INTERVAL 13-33%) IN MEN AND 12% (2-22%) WOMEN WAS OBSERVED WHEN COMPARING SUNDAY VS MONDAY
- LIKELIHOOD RATIO TEST CONFIRMED A STRONG ASSOCIATION OF THE DAY OF THE WEEK WITH THE RISK OF ISCHEMIC STROKES (p < .001 FOR MEN AND p = .04 FOR WOMEN)
- THE EXCESS OF ISCHEMIC STROKES ON MONDAY WAS PROMINENT AMONG MEN ≥ 45 AND AMONG WOMEN 25-99.
- LIKELIHOOD RATIO TEST FOR 28-DAY CASE-FATALITY OF ISCHEMIC STROKES SHOWED SIGNIFICANT VARIATION IN BOTH GENDERS (p < .001)
- 28-DAY CASE-FATALITY FOLLOWED COSINE CYCLE WITH A ZENITH ON WEEKEND AND NADIRE ON BEGINNING OF THE WEEK AMONG WOMEN ≤ 65 YEARS.

Conclusion

The findings suggest that there is a small but statistically significant excess risk of ischemic strokes on Mondays compared with Sundays. This excess risk depends on age and gender.

Further research on causes of the excess risk may help to prevent strokes in groups affected most.