Stroke Recurrence and Mortality In Northeastern Greece: The Evros Stroke Registry

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Introduction

- Up to date there is **no population-based study from Greece** providing long-term data on incidence of both all-cause mortality and stroke recurrence for patients with **first-ever stroke (FES)** [1-10].
- We sought to **determine long-term all-cause mortality and stroke recurrence** incidence rates of patients with FES that have been recruited to the largest and most current prospective, population-based registry evaluating the incidence of FES in northeastern Greece [11].

Methods

- Adult patients with FES** were registered during a 24-month period (2010-2012) and **followed-up for 12 months**.
- We calculated cumulative incidences of stroke mortality and recurrence.
- Kaplan-Meier curves were generated for both the aforementioned outcomes of interest, while **potential differences according to FES type or first-ever IS subtype** were assessed with the log-rank test.
- Univariable and multivariable Cox proportional hazards regression analyses were used to **identify independent determinants of 1-year mortality and 1-year stroke recurrence**.

Results

- We documented **703 FES** [mean age: 75±12 years; 52.8% males; ischemic stroke: 80.8%, intracerebral hemorrhage: 11.8%, subarachnoid hemorrhage: 4.4%, undefined: 3.0%) with a total follow-up time of 119,805 person-years.
- The **cumulative incidence rates of mortality** at 28-days, 3-months and 1-year were 21.3% (95%CI: 18.5-24.5%), 26% (95%CI: 22.9%-29.4%) and 34.7% (95%CI: 31.3%-38.3%) respectively (Figure 1).
- Cumulative 1-year stroke mortality differed according to both index FES type** (Figure 2 & Figure 3A), **but also across different ischemic stroke subtypes** (Figure 3B).
- The **risk of 1-year mortality was independently (p<0.05) associated** with advancing age, history of hypertension, increased stroke severity on admission, and hemorrhagic FES type.
- The **cumulative incidence rates of recurrent stroke** at 28-days, 3-months and 1-year were 2.0% (95%CI: 1.2%-3.6%), 4.2% (2.8%-6.2%) and 6.7% (5.1%-8.8%), respectively, **with no significant difference according to stroke type or IS subtype** (Figure 4).

Figure 1. Distribution of modified Rankin Scale scores at baseline assessment, 28 days, 3 months and 12 months following the index event.

Figure 2. Kaplan-Meier curves depicting all-cause mortality during the 1-year follow-up period in patients with ischemic or hemorrhagic stroke.

Figure 3. Kaplan-Meier curves depicting all-cause mortality during the 1-year follow-up period stratified by (A) first ever stroke type and (B) first ever ischemic stroke subtype.

Figure 4. Kaplan-Meier curves depicting stroke recurrence during the 1-year follow-up stratified by (A) first ever stroke type and (B) first ever acute ischemic stroke subtype.

Conclusion

- Our study reports **comparable to similar population-based studies [1-10] all-cause mortality and stroke recurrence rates** in patients with FES, **highlighting that stroke survivors represent a continuing high-risk population**.
- Given the high incidence rates and rapid population aging in southeastern Europe, **dedicated rehabilitation programs and effective secondary prevention strategies are urgently needed** for stroke survivors.

References

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