

The Incidence Rate, Mortality Rate and Functional Outcome of Ischemic Stroke According to Age Sex and Ethnic Group in the State of Qatar

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There are scattered reports about the incidence of ischemic stroke (IS) in the Middle East [1,2]. Using the stroke database from the main hospital in Qatar, we reported the incidence of IS over the period of Dec 2013 to June 2019. The incidence of IS was calculated based on age groups and ethnicity (Qatari nationals, non-Qatari middle eastern, South east Indian (SI) African Caucasian and Far East Asians (FE)).

There were 4514/8020 (56%) with Ischemic Stroke. The median age was 54 (IQ range: 46-63) with a male/female ratio: 3684/830 (81.6%/18.4%). Mean age based on ethnicity: Qatari: 65 +/- 14, MENA: 61 +/- 14, SI: 51 +/- 10, FE: 50 +/- 10, African: 56 +/- 13, and Caucasian: 58 +/- 12 (P<0.001). Poor outcome at discharge (mRS 3-6): 34.4% (1553/4490) and poor long-term outcome (mRS 90 days:3-6) 22.5% (953/4239). The stroke etiology based on TOAST classification: SVD: 49.7% (2245/4514), LVA: 42.4% (1914/4514), CE: 5.4% (239/4514), Defined etiology:0.8 (38/4514) and Unknown: 1.7% (78/4514). And this is seen across all ethnic groups.

Intravenous thrombolysis was administrated to 608/4515 patients (13.5%) and mechanical thrombectomy in 227/4515 (5%). Hemorrhagic transformations occurred in (8 (0.2%) symptomatic and 38 (0.8%) asymptomatic). Recurrence stroke or TIA within admission occurred in only 11 cases.

The incidence rate of IS over 6 years period based on ethnicity is the following: in Qatari was (792/333 000) 238 per 100 000, MENA region (691/536 721) 129 per 100 000, south Indian (2330/1 794 000) 130 per 100 000, Far east (390/286 164) 136 per 100 000, African (188/ 157 040) 120 per 100 000, and Caucasian (105/106 136) 99 per 100 000.

The highest rate of long-term poor outcome (3 months mRS \geq 3) was seen in the elderly (\geq 70 years old) (237/615) (38.5 %)

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and Qatari ethnic group 30.2% (228/755).

In multiple logistic regression analysis, old age (≥ 70 years old) was associated with poor long-term outcome (adj OR: 2.4, 95% CI: 1.8-3.1, $P < 0.001$), Qatari ethnicity: (adj OR: 1.4, 95% CI: 1.1-1.8, $P = 0.003$)

We concluded that the incidence rate of IS was high in the elderly and in the Qatari ethnic group. This could be explained by the high rate of elderly in Qatari and young in other ethnic groups. The low rate of hemorrhagic transformation could be explained by the high rate of small vessel disease in our cohort. The high rate of SVD could be explained by uncontrolled and newly diagnosed hypertension and DM in our population [3]. Further studies are needed to better understand the differences in IS prognosis in multiethnic groups.

Compliance with Ethical Standards:

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Informed consent: not obtained since it is retrospective study

Author Contributions:

MS did the analysis and wrote the manuscript

AS did the analysis and contributed in the editing

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