Case fatality of stroke in Iran: A systematic review and meta-analysis

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Context: Cerebrovascular diseases are the second leading cause of death in the world and more than 85% of their deaths occur in low and middle-income countries. Most of the deaths in this group are related to myocardial infarction and stroke.

Objectives: Regarding significant increase in stroke incidence in the world and the scarcity of data about the epidemiology of stroke in Iran, we decided to calculate 28-day case fatality rate of stroke in Iran through a systematic review.

Data Sources: We searched electronic international (PubMed, SCOPUS, Web of Science) and domestic (Scientific information Databases (SID), IranMedex, Iran doc) databases based on pre search strategy. We searched above mentioned databases from January, 1990 to August, 2012 with no other limitations.

Study Selection: All national, provincial, district and community studies which were conducted in Iran and reported 28-day case fatality rate of stroke were assessed by two independent reviewers and studies which used WHO definition of stroke were included in this systematic review.

Data Extraction: 28-day case fatality of stroke was extracted from 13 identified studies based on stroke subtypes. Meta-analysis was conducted for 9 studies which were reported the figure for combination of ischemic and hemorrhagic stroke and also was applied for 2 studies on ischemic stroke subtype.

Results: Nine studies reported case fatality rate of both pathologic type of stroke (ischemic and hemorrhagic) with a range of 13.6% to 32%, three studies documented case fatality of ischemic stroke (from 7.3% to 15.3%) and one study reported case fatality of hemorrhagic stroke as 37.6%. The pooled estimate of 28-day case fatality rate for combination of ischemic/hemorrhagic stroke was 23.6% (95% CI: 17.7-29.5) and was 13.6% (95%CI:11.8-15.4%) for ischemic subtype. All of the studies reported case fatality rate in the combination of both sexes.

Conclusions: Studies on the epidemiology of stroke in Iran is scarce. Case fatality of stroke in Iran is comparable with East Europe and East Asia countries while it is higher than most high income countries. We recommend studies on the root causes of this high fatality and systematic interventions based on the evidence-based guidelines.

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