Relationship between the ischemic stroke subtypes and risk factors included clinical outcome from Prasat Neurological Institute stroke registry

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Background and Purpose- The ischemic stroke has different in risk factors, severity, acute treatment stratigies and clinical outcomes. The objective of this study is to determine the association between risk factors, severity, current treatment strategies, complications, clinical outcome and the acute ischemic stroke subtypes.

Methods- We prospectively collected data of acute ischemic stroke patients who were admitted within 7 days of onset of symptoms to the acute stroke unit Prasat Neurological Institute from 1 June 2013 to 31 August 2013. All of the patients were categorized to the one of five of major ischemic stroke subtypes by TOAST (Trial of Org 10172 in Acute Stroke Treatment) based on the MRI imaging [small vessel atherosclerosis (SAO), large vessel atherosclerosis (LAA), cardiac embolism (CE), other determined etiology (OD), other undetermined etiology (UND)] within 72 hours of admission onset. Collected data included risk factors, severity, current treatment strategies, complications, clinical outcome at 3 month follow up. Fisher's Exact Test or Kruskal-Wallis Test were used to determine the association of these factors to the acute ischemic stroke subtypes.

Results- 140 acute ischemic stroke patients were studied. The distribution of subtypes by most often was SAO, LAA, CE, OD, UND (45, 34.3, 12.9, 4.3, 3.6 %) respectively. Age, severity, treatment strategies, complications, costs and outcomes were significantly difference in each subtypes of stroke ($p< 0.001$). The distribution of subtypes by more often was SAO, LAA, CE, OD, UND (45, 34.3, 12.9, 4.3, 3.6 %) respectively. The CE subtype had the oldest median age [68.5(51.2-71.5) yrs] and was mostly treated by intravenous thrombolytic (11.1%) or anticoagulant (83.3%). The severity by National Institutes of Health Stroke Scale (NIHSS) of LAA (7), CE (6.5), OD (7) was more higer than of SAO (4), UND (3). The highest median age [68.5(51.2-71.5) yrs], median cost [42,830(31,713-60,714) baths], complication about brain edema and hemorrhagic transformation (22%) was found in CE while pneumonia was more common in OD subtype (16.7%). In SAO subtype had shortest length of stay (4days) and had the number of patients which modified rankin score 0-2 more than other groups.

Conclusion- Severity, treatment, clinical outcome and prognosis of each stroke subtypes are not the same. Treatment as well as prevention should be optimized for each subtype.