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RISK FACTORS AND CLINICO RADIOLOGICAL CORRELATION IN ACUTE CEREBRO VASCULAR ACCIDENT

Neurology

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ABSTRACT

Objective: To study about the risk factors and clinico radiological correlation in acute cerebro vascular accident.

Methods: This study is done in acute stroke division of neurology department in Coimbatore medical college hospital from December 2017 to May 2018.

Inclusion Criteria: All patients presented with acute cerebro vascular accident were included.

Exclusion Criteria: All patients presented with neurological deficit due to non vascular causes are excluded.

Results: This study is done in 106 patients presented with acute stroke. Males (67.9%), Females (32.1%) Mean age in males (55.2years), mean age in females (61.8years). Anterior circulation (AC) stroke (64.1%), Posterior circulation (PC) stroke (30.1%). Acute venous stroke (5.6%). Among the AC stroke, ischemic stroke (88.7%), hemorrhagic stroke (5.6%), Common risk factors include hypertension, diabetes mellitus and coronary artery disease. Patient with single risk factor (45.2%) more than one risk factors (49.05%), In statistical analysis hypertension, diabetes mellitus had statistically significant risk of stroke (P<0.00001). AC stroke showed statistically significant involvement of internal capsule (P<0.00001) and parieto temporal cortex. PC stroke revealed statistically significant involvement of cerebellum (P<0.00001). In AC stroke common vessel involved is middle cerebral artery (P<0.00001). PC stroke the common blood vessel involved is posterior inferior cerebellar artery (P<0.00001).

KEYWORDS

Risk factor, acute stroke, vascular territory, Anatomical site.

INTRODUCTION:

Stroke is a major public health problem. The burden of stroke can be reduced by effective stroke prevention methods and treatment of acute stroke. The greatest effect is achieved by lifestyle modification and management of risk factors. Early neuro imaging and treatment of acute stroke in stroke care unit decreases the morbidity and mortality due to cerebra vascular disease.

OBJECTIVE:

To study about the risk factors and clinico radiological correlation in acute cerebro vascular accident.

METHODS:

This study is done in acute stroke division of neurology department in Coimbatore medical college hospital from December 2017 to May 2018.

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DISCUSSION:

Stroke is due to interruption of blood supply to the brain parenchyma. Stroke is divided into ischemic and hemorrhagic type. Ischemic stroke is due to thrombosis, embolism and cerebral hypo perfusion. Hemorrhagic stroke is due to hypertension AVM and cerebral aneurysm rupture.

The risk factors for stroke includes Hypertension, Diabetes mellitus, Tobacco use, High cholesterol, History of coronary artery disease, coronary artery bypass, or atrial fibrillation. In young patients includes recent trauma, Coagulopathies, Illicit drug use, Migraines, Oral contraceptive use[3,4,5,6].

Anterior circulation, ischemic stroke mostly due to occlusion of internal carotid artery, middle cerebral artery and its branches and anterior cerebral artery. Internal carotid artery (ICA) occlusion is mostly due to artery to artery embolism or propagating thrombus and perfusion failure from distal insufficiency. Middle cerebral artery (MCA) supplies internal capsule Basal ganglia, lateral frontal, temporal and parietal lobes, insula, claustrum and external capsule. Occlusion of middle cerebral artery is the common type of anterior circulation stroke, involves mainly M1 and M2 segments. Anterior cerebral artery (ACA) supplies whole of the medial surface of frontal and parietal lobes, corpus callosum. Occlusion of anterior cerebral artery is uncommon about 2%[1].

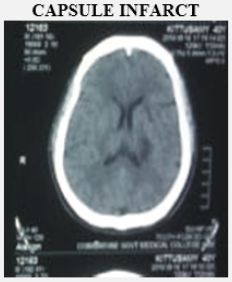
Posterior circulation is supplied by vertebral arteries, basilar artery, posterior cerebral artery and its branches[2].

Manifestation of stroke includes Hemiparesis, monoparesis or quadriparesis, Hemisensory deficits, Monocular or binocular visual loss, Visual field deficits, Diplopia, Dysarthria, Facial droop, Ataxia, Vertigo, Aphasia, Sudden decrease in the level of consciousness[7].

Neuro imaging for diagnosis of ischemic stroke, MRI scan has 98% specificity and for diagnosis of hemorrhagic stroke, CT scan has 100% specificity.

Results among three infarct patterns, subcortical infarcts were noted with the highest proportion. The highest proportion of territorial infarcts was significantly associated with a poor outcome. Cortical infarcts were significantly associated with good outcome[9,10].

CT BRAIN – LEFT INTERNAL CAPSULE INFARCT



MRI – DWI LEFT CEREBRAL INFARCT

This study revealed common risk factors were hypertension and diabetes in statistically significant population.

This study revealed common structures involved are internal capsule in anterior circulation stroke, cerebellum in posterior circulation stroke in significant study group.

Common clinical manifestations in this study are hemiparesis, facial droop, Aphasia, in AC stroke. Ataxia, vertigo and visual field defects in PC stroke.

Management of hypertension and diabetes in early phase reduce the incidence of stroke.

CONCLUSION:

Hypertension, diabetes and heart disease were common risk factors for acute stroke. Middle cerebral artery and posterior inferior cerebellar artery are commonly involved. Lifestyle modification, risk factor management reduce the incidence of acute stroke and its complications.

REFERENCES:

1. Anterior Circulation Stroke - Dec 08,2015 Author: Draga et al. McMaster university school of medicine, Canada
2. Posterior circulation cerebrovascular syndromes – Louis R caplan, MD, New England medical center.
3. Risk factors of Stroke – VR Bhatt et al, Kathmand University.
4. Risk factors in stroke – Piero mustacchi MD,1985 Aug, 143(2) 186-1892.
5. Risk factors for stroke – javed Akhter rathore, combined military hospital , Muzzaffarabad, Azad Kashmir, J Ayub medical college, Abbottabad 2013:25 (1-2)
6. Risk factors for ischemic stroke – Claire L Allen et al, Ulvi Bayraktutan, International Journal of stroke - May 1, 2008.
7. Manifestations of Stroke – Jeyaraj Duraipandian, Indian journal of medical research. Karger Switcherland 2015-June141-(6) 849-850
8. Ischemic stroke clinical presentation – Edward c jauch et al, feb 15-2018.
9. Clonicoradiological correlation of infarct patterns on diffusion- weighted magnetic resonance imaging in stroke- Zainab hussain et al, - Cureus 10(3) March 02-2018
10. Clinical correlations of diffusion and perfusion lesion volumes in acute ischemic stroke – Baird et al, Cerebrovas Dis 2000: 10:441-448.