ABSTRACT

POSTERIOR CIRCULATION STROKE CHARACTERISTICS

[POCSTROCH STUDY] - AN OBSERVATIONAL COHORT STUDY

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Introduction: Cerebrovascular accident is among the leading causes of acquired disability and death worldwide. Posterior circulation stroke [PCS] with its difficulty in early diagnosis, seldom have the appropriate evaluation or management done. Studies are scarce which looked into the independent predictors of long term bad outcomes of PCS.

Our study aimed to characterize PCS among patients above 18 years age, presenting to Christian Medical College Vellore, over a period of 3 years. We wished to determine the short and long term outcomes of PCS.

Methods: We conducted a prospective observational cohort study in consecutive PCS patients who presented to our hospital. All patients from **January 2014 to May 2017 were recruited, diagnostic criteria assessed and prognostic scores calculated. Morbidity and mortality at discharge, at 3 months and 6 months was studied.**

Results: We recruited 291 PCS patients who were followed up in our cohort. Prevalence of posterior circulation stroke to the total strokes in our center in 1 year

was 12.9% [111/860]. Mean age of presentation was 53.34 years (SD 13.34 years). Young strokes constituted 28.8%. The common co-morbidities were hypertension 72%, diabetes mellitus 52.6%, smoking 38.5% and dyslipidemia 32.6%. The common presenting symptoms were giddiness 79%, unsteadiness 75.35%, ataxia 56%, motor deficits 48.8% and nausea & vomiting 43%. Most were Ischemic strokes 86.5%. Among the arteries involved, posterior cerebral artery 45%, posterior inferior cerebellar artery 38% and basilar artery 19.2%. Among ischemic strokes, large artery atherosclerosis was 50.8%, cardio embolism and small vessel occlusion were 14.4% each. Dysphagia was seen in 32.6%, sepsis in 19.2% and invasive ventilation in 8% . Post stroke pain, a late complication was seen in 23%, followed by cognition decline in 10.3%. Mortality was 6.2% at discharge, 2.4% at 1-month, 1.7% at 3-months and 0.7% at 6 months, following discharge. Morbidity [modified Rankin Scale (mRS) 4 or 5] was 10.7% at discharge, 7.9% at 1 month, 4.1% at 3 months and 3.1% at 6 months. Bad outcome [mRS 4 to 6] was 16.8% at discharge, 16.4% at 1 month, 14.4% at 3 months and 13.8% at 6 months. Independent predictors of bad outcomes at 6-months were baseline National Institute of Health Stroke Scale (NIHSS) score [OR 1615.59 with CI 27.64-94447.7], invasive ventilation [OR 7.77 with CI 1.57-38.43], sepsis [OR 17.22 with CI 1.45-204.08], basilar artery involvement [OR 19.98 with CI 1.67-238.81]. Baseline NIHSS score has an area under the curve 94% showing good ability to discriminate between good and bad outcomes. NIHSS scores between 0 to 5 suggest a good outcome while scores more than 13 suggest a bad outcome at 6 months. Our cohort follow-up of 6 months is among the largest to date.

Conclusion: The prevalence of PCS in our study was similar to the other studies in India and the West. Clinical features and co-morbidities were also similar to previous studies. Survival analysis suggest good survival at 3 and 6 months following PCS. The baseline NIHSS score is an independent predictor of bad outcomes at 6 months.