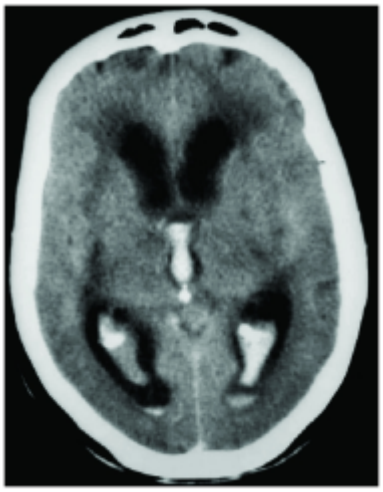
Idiopathic primary intraventricular hemorrhage



Idiopathic primary intraventricular hemorrhage is defined as primary intraventricular hemorrhage without cerebrovascular abnormalities.

Primary intraventricular hemorrhage (PIVH) is a rare condition in adult patients.

Primary intraventricular hemorrhage (PIVH) occurs frequently in adult hemorrhagic moyamoya disease (MMD).

A study aimed to compare the baseline characteristics and outcomes of acute MMD-related and idiopathic PIVH.

Adult patients with acute MMD-related or idiopathic PIVH were retrospectively included. Baseline characteristics and outcomes at discharge were obtained and compared. Chi-square test, t-test, or rank-sum test were used in statistical analyses.

This study finally included 32 patients with acute MMD-related PIVH and 112 with acute idiopathic PIVH. Patients with acute MMD-related PIVH were significantly younger (53.3 ± 15.8 vs. 42.8 ± 12.2 years, P<0.001). The admission systolic blood pressure in patients with acute idiopathic PIVH was significantly higher (161.7 ± 30.9 vs. 134.6 ± 24.6 mmHg, P<0.001). Patients with acute idiopathic PIVH had significantly higher admission serum urea (5.68 ± 2.66 vs. 4.34 ± 1.62 mmol/l, P=0.008), cystatin C (0.97 ± 0.72 vs. 0.68 ± 0.16 mg/l, P=0.023), and uric acid (309.01 ± 105.97 vs. 242.24 ± 77.65 µmol/l, P=0.001). In patients with acute MMD-related PIVH, only one (3.1%) patient was dead at discharge. In contrast, a total of 22 (19.6%) patients with acute idiopathic patients died at discharge (P=0.027).

Comparing to patients with acute idiopathic PIVH, patients with acute MMD-related PIVH have younger age, lower blood pressure, and better renal function. Moreover, patients with acute MMD-related PIVH have lower short-term mortality [1)].

The aim of a study is to define the clinical features, risk factors, treatment and prognosis of idiopathic primary intraventricular hemorrhage (IPIVH).

Guo et al., retrospectively collected the data of consecutively admitted patients who were diagnosed and treated for IPIVH in the hospital from January 2010 to December 2014. The clinical information, treatment, and prognosis at the 6-month follow-up were analyzed.Among the 3798 cases of spontaneous intracranial hemorrhage (ICH), 98 IPIVH (2.58%) patients were recruited for the study. The study population consisted of 60 males and 38 females, with an average age (± standard deviation, SD) of 51.20±15.48 years. The initial symptoms were headache (75 cases) and impaired consciousness (23 cases). The surgical treatments included hematoma evacuation under a microscope or an endoscope in 8 cases (8.16%), external ventricular drainage (EVD) in 11 cases (11.22%), lumbar drainage (LD) in 10 cases (10.20%), and a combination of EVD and LD in 11 cases (11.22%). In total, 4 patients died in the hospital (4.08%). At the 6-month follow-up, 73 patients (74.49%) had an improved outcome (modified Rankin scale [mRS] < 3), and 21 patients (21.43%) had a poor outcome (mRS ≥ 3 points) at the end of the 6-month follow-up.IPIVH is rare in clinical practice, and hypertension is the most common risk factor. Furthermore, the treatment of IPIVH is still controversial. Hematoma evacuation under a microscope or an endoscope, EVD, LD and a combination of EVD and LD could be surgical options for the treatment of IPIVH patients. The outcomes for IPIVH patients could be relatively favorable with individualized treatment [2].

Giray et al., retrospectively reviewed the clinical data, complementary examinations, outcome and computed tomography (CT) IVH score of 24 patients in our hospital from 2004 to 2008. We identified 24 patients with the inclusion criteria of non-traumatic PIVH. Their mean age was 60.6+/-17.4 years (range 38-79). Fourteen patients were male and 10 were female.

The major symptoms included headache (n=24), loss of consciousness (n=6), confusion and disorientation (n=14), nausea/vomiting (n=10). Angiography revealed vascular malformations in five patients (21%). Other possible causative factors were hypertension in 12 patients (50%) and clotting disorder in one. The aetiology remained unknown in six patients. Most PIVH patients had associated hydrocephalus (58%) and 37% of the patients required ventricular drainage. In-hospital mortality was high (41%) and a FOUR score <or=10, GCS <or=8 and early hydrocephalus were independent predictors of mortality.

Hypertension is the most common associated risk factor for PIVH followed by vascular malformation. Spontaneous resorption and rebleeding may be seen. The neurological status of the patients and an early developing hydrocephalus are the most important risk factors [3].

References

1)
Yu Z, Guo R, Zheng J, Li M, Wen D, Li H, You C, Ma L. Comparison of acute moyamoya disease-related and idiopathic primary intraventricular hemorrhage in adult patients. World Neurosurg. 2019 Jan 24. pii: S1878-8750(19)30167-6. doi: 10.1016/j.wneu.2019.01.070. [Epub ahead of print] PubMed PMID: 30685378.
2)

Guo R, Ma L, Shrestha BK, Yu Z, Li H, You C. A retrospective clinical study of 98 adult idiopathic primary intraventricular hemorrhage cases. Medicine (Baltimore). 2016 Oct;95(42):e5089. PubMed PMID: 27759637; PubMed Central PMCID: PMC5079321.

3)

Giray S, Sen O, Sarica FB, Tufan K, Karatas M, Goksel BK, Yerdelen D, Cekinmez M, Can U. Spontaneous primary intraventricular hemorrhage in adults: clinical data, etiology and outcome. Turk Neurosurg. 2009 Oct;19(4):338-44. PubMed PMID: 19847752.