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A prospective study of clinical profile of patients with intracerebral Hemorrhage

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Abstract
Background: Approximately, 35–50% of patients with ICH die within 1st month of bleeding. Data from the Asian Stroke Advisory Panel revealed an incidence of ICH ranging from 17% to 33% of all strokes, twice as high as in Western countries. Mortality depends on the size of the hematoma and on the location in the brain.
Aims and Objectives: to study the clinical profile and mortality among patients presenting with ICH.
Materials and Methods: Two hundred ICH patients confirmed by CT scan/MRI were studied at Department of Medicine, G.R. Medical College and JA Group of Hospitals, Gwalior from 2016 -2018. After a detailed clinical history, detailed general and systemic examination was performed. All the selected patients were subjected to routine blood investigations like CBC, RBS, RFT, LFT, lipid profile. Mortality was also recorded.
Results: ICH was more prevalent among the age group of 61-70 years (27.5%) and 71-80 years (23.55) and among the male population (66.3%). Weakness (62.5%) followed by vomiting (36.5%) and headache (35.5%) were the most common clinical features of ICH. Hypertension (69%, smoking (28.5%) and alcohol intake (21.5%) were the most common risk factors. Mortality was 26.5% in present study.
Conclusion: ICH was more prevalent in males with older age. Weakness, vomiting and headache were main features associated with ICH. Increasing age, hypertension, diabetes mellitus, alcohol, smoking, hypercholesterolemia were the major risk factor for ICH.

Keywords: hypercholesterolemia, cerebral bleed, brain bursts

Introduction

Intracerebral hemorrhage (ICH) occurs when a diseased blood vessel within the brain bursts, allowing blood to leak inside the brain. The sudden increase in pressure within the brain can cause damage to the brain cells surrounding the blood. If the amount of blood increases rapidly, the sudden buildup in pressure can lead to unconsciousness or death [1].

ICH or cerebral bleed is a common neurologic event that causes high morbidity and mortality with profound economic implication. ICH will seem to continue to be an important problem in both India and other developed countries. Non-traumatic ICH occurs due to bleeding from a vascular source directly into the brain substance. It is a major public health problem with an annual incidence of 10–30/100,000 population accounting for 2 million (10–15%) of about 15 million strokes worldwide each year [2, 3].

Radiological studies such as computerized tomogram (CT) scan and magnetic resonance imaging (MRI) have facilitated in locating and assessing the extent of insult precisely and deciding prognosis of the patient. Although several randomized therapeutic trials for ICH have been published, neither surgical nor medical treatments have been shown conclusively to benefit the patients [4].

However, early surgical intervention has shown mild statistically significant improvement in clinical outcome. Prognostic factors for predicting functional outcome and mortality plays a major role in determining the treatment outcome [5].

Hospital admissions for ICH have increased by 18% in the past 10 years, probably because of increase in the number of elderly people, many of whom lack adequate blood pressure (BP) control, and the increasing use of anticoagulants, thrombolytics, and antiplatelet agents. Incidence might have decreased in some populations with improved access to medical care and BP control [6]. Hence present study was performed to study the clinical profile of patients of ICH.

Material and Methods

We performed hospital based cross sectional, short term prospective study on 200 patients diagnosed as ICH confirmed by CT scan/MRI at Department of Medicine, G.R. Medical College and JA Group of Hospitals, Gwalior from 2016 -2018. In all cases written informed consent was obtained from each subjects.

Suspected patients were subjected to CT scan / MRI in department of radiology and only confirmed cases of intracerebral hemorrhage were included into the study.

Detailed clinical history was taken with special reference to presenting symptoms, such as altered sensorium, weakness, headache, vomiting, giddiness, seizures and about the time of onset of illness. Detailed general and systemic examination specially neurological examination was done.

All the selected patients were subjected to routine blood investigations like CBC, RBS, RFT, LFT, lipid profile. Mortality of all admitted patients was assessed during course of hospitalization.

Patients having age of 18 years or more, cases of ICH confirmed by CT scan/MRI, those who presented within 72

hours of onset of symptoms and who were willing to participate in the study were included.
Patients with age <18 years, those who presented after 72 hours of onset of symptoms, ICH secondary to head trauma, brain tumour, subarachnoid hemorrhage and patients who were not willing to give consent were excluded from the present study.

Table 1: ICH score (Smith WS)

Clinical or Imaging Factor		Point score
Age	<80	0
	>80	1
Hematoma Volume	<30	0
	>30	1
Intraventricular Hemorrhage	No	0
	Yes	1
Infratentorial Hemorrhage	No	0
	Yes	1
GCS score	13-15	0
	5-12	1
	3-4	2

All the data analysis was performed using IBM SPSS ver. 20 software. Frequency distribution and cross tabulation was used to prepare table and graphs were prepared using Microsoft excel 2010. Numerical variables were presented as mean &standard deviation (SD) while categorical variables were presented as percentage. As regard numerical variables, unpaired student -t test was used whenever appropriate, for between-group comparisons, while for categorical variables; chi-square test was used. A difference with significant level <0.05 was considered statistically significant.

Results

Majority of the patients were in the age group of 61-70 years (27.5%) followed by 71-80 years (23.55). Majority of the patients were male (66.3%) followed by female (33.5%).

Table 2: Clinical features of patients

Clinical features	No of patients	Percentage
Headache	71	35.5
Vomiting	73	36.5
Weakness	125	62.5
Seizure	23	11.5
Altered sensorium	74	37

Table 3: Risk factors among patients

Risk factors	No of patients	Percentage
Smoking	57	28.5
HTN	138	69
Diabetes	23	11.5
Alcohol	43	21.5
H/o CAD	25	12.5
Hypercholesterolemia	20	10

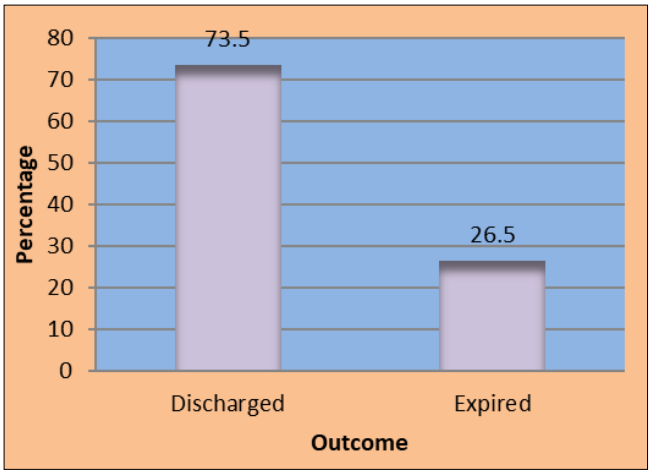

Fig 1: Showing outcome in present study

Discussion

An ICH account for only 15% of all strokes but it is one of the most disabling forms of stroke. Greater than one third of patients with ICH will not survive and only 20% of patients will regain functional independence [7]. Understanding the clinical profile of patients will help in preventing the occurrence of ICH.
In present study the incidence of ICH increased with advanced age. A recent inpatient database study from the Netherlands based on retrospective cohort study reported that the incidence of ICH per 100,000 was 5.9 in 35-54 years, 37.2 in 55-74 years, and 176.3 in 75-94 years old in 2010.[8] In agreement to the present study majority of the patients were in the age group of 61-70 years (27.5%) followed by 71-80 years (23.55). A similar study by Nileshkumar *et al.* reported that maximum number of cases i.e. 38 (76%) were between the age groups 45 to 74 years and age ranged from 35 to 74 years [9]. All studies have shown a steep rise in incidence with increasing age. In a German study analyzing database of a regional prospective stroke registry between 2007 and 2009, 34% of 3,448 patients with ICH were aged 80 years or more [10]. Sia *et al.* in a similar study reported that the age range was from 26-92 years with mean age for patients presenting with ICH was 61.6 years [11]. Yannick *et al.* reported an 80% increase in the incidence of ICH among people aged 75 years, contrasting with a 50% decrease in individuals aged 60 years. It suggests that in elderly population some bleeding-prone vasculopathiesmay be responsible for bleeding particularly when antithrombotic drugs are used [12].
In present study majority of the patients were male (66.3%) followed by female (33.5%). Sia *et al.* determined the mortality rate of ICH at the time of discharge, the prognostic factors and one year outcome of this cohort of 66 patients and reported that there were 33 men (50%) and 33 women (50%) with a male to female ratio of 1:1 [11]. Men are more likely to have aICH than women. This may be due to differences in risk factors such as smoking and drinking

which are more prevalent among men in India compared with women [13].

Most common clinical feature in present study was weakness in 62.5% followed by vomiting in 36.5% and headache in 35.5%. Nileshkumar *et al.* studied 50 cases of ICH coming to the tertiary care centre of Surat and reported that most common presenting symptoms was altered sensorium in 60%, weakness of limb/limbs 58%, vomiting in 46%, headache in 44%, giddiness in 20% and seizure in 6% [9]. Sia *et al.* revealed that approximately 50% of patients were detected to have motor deficit. The most common clinical features for primary ICH were weakness (61.8%), loss of consciousness (58.5%) and headache (56.3%) [11]. Narayan *et al.* explored etiology of ICH and correlate the causes, location, and size of hemorrhage to clinical outcome and reported that the most common clinical presentation was hemiplegia [14].

Modifiable risk factors include hypertension, cigarette smoking, excessive alcohol consumption, decreased low-density lipoprotein cholesterol, low triglycerides and drugs including anticoagulant, antithrombotic agent, and sympathomimetics. Non-modifiable risk factors include old age, male sex and Asian ethnicity [15, 16]. The Interstroke study, an international case-control study of 6,000 individuals in 22 countries worldwide, showed that hypertension, smoking, waist-to-hip ratio, diet, and high alcohol intake were major risk factors for ICH, and these modifiable risk factors accounted for 88.1% of the population-attributable risk [17].

A history of hypertension is major risk factor for ICH as reported by a number of authors [18]. In present study majority of the patients had hypertension (69%) as the most common risk factor followed by smoking (28.5%) and alcohol intake (21.5%). In agreement to present study findings Sia *et al.* also reported that hypertension was the most common cause of ICH which accounts for 84.8% of the patients [11]. Hypertension was also reported as a major risk factor for mortality amongst patients with ICH in a study by Mase G *et al.* in Italy [19]. Present study observations correlates with the study done by Srivastava *et al.*, which showed hypertension and smoking were the most common risk factors in both young and elderly groups [20].

Overall mortality in present study was 26.5%. Similar mortality rates were reported by the study done by Smith *et al.*, [21] Mase *et al.* [19] and Narayan *et al.* [14]

Cross sectional nature and small sample size were the main limitations of the present study. A large randomized clinical trial is needed to strengthen the present study findings.

Conclusion

In present study males were mostly affected by ICH of older age, mainly patients who were in sixth to eight decade of their life. Weakness, vomiting and headache were mainly associated with ICH. In present study we conclude that increasing age, hypertension, diabetes mellitus, alcohol, smoking, hypercholesterolemia were the major risk factor for ICH. Identification of above mentioned risk factors and scores early will be useful in decreasing the mortality among the patients with ICH.

References

1. Stroke epidemiological data of nine Asian countries. Asian acute stroke advisory panel (AASAP). J Med Assoc Thai. 2000; 83:1-7.
2. Qureshi AI, Tuhrim S, Broderick JP, Batjer HH, Hondo H, Hanley DF. Spontaneous intracerebral hemorrhage. N Engl J Med. 2001; 344:1450-60.
3. Sudlow CL, Warlow CP. Comparable studies of the incidence of stroke and its pathological types: Results from an international collaboration. International stroke incidence collabo-ration. Stroke. 1997; 28:491-9.
4. Mendelow AD, Gregson BA, Fernandes HM, Murray GD, Teasdale GM, Hope DT, *et al.* Early surgery versus initial conservative treatment in patients with spontaneous supratentorial intracerebral haematomas in the international surgical trial in intracerebral haemorrhage (STICH): A randomised trial. Lancet. 2005; 365:387-97.
5. Nilsson OG, Lindgren A, Brandt L, Säveland H. Prediction of death in patients with primary intracerebral hemorrhage: A prospective study of a defined population. J Neurosurg. 2002; 97:531-6.
6. Feigin VL, Lawes CM, Bennett DA, Anderson CS. Stroke epidemiology: A review of population-based studies of incidence, prevalence, and case-fatality in the late 20th century. Lancet Neurol. 2003; 2:43-53.
7. Counsell C, Boonyakarnkul S. Primary intracerebral hemorrhage in the Oxfordshire Community Stroke Project. Cerebrovasc Dis 1995; 5:26–34.
8. An SJ, Kim TJ, Yoon BW. Epidemiology, Risk Factors, and Clinical Features of Intracerebral Hemorrhage: An Update. Journal of Stroke. 2017; 19(1):3-10.
9. Nileshkumar M, Pandya RB, Vaghani CV, Marwadi MR, Gheewala GK. Viral A. A Study on Clinical Profile, Risk Factors And Mortality In Hypertensive Intracerebral Hemorrhage In A Tertiary Care Hospital In Surat City. National Journal of Medical Research. 2013; 3(4):381-4.
10. Jolink WM, Klijn CJ, Brouwers PJ, Kappelle LJ, Vaartjes I. Time trends in incidence, case fatality, and mortality of intracerebral hemorrhage. Neurology. 2015; 85:1318-24.
11. Sia SF, Tan KS, Waran V. Primary Intracerebral Haemorrhage in Malaysia: In-hospital Mortality and Outcome in Patients from a Hospital Based Registry. Med J Malaysia. 2007; 62(4):308-12.
12. Yannick B, Cordonnier C, Rouaud O, Giroud M. Intracerebral Haemorrhage profiles are changing: results from the Dijon population-based study. Brain 2013; 136:658-64.
13. Das S, Banerjee T. Stroke Indian scenario. Circulation. 2008; 118:2719-24.
14. Narayan SK, Sivaprasad P, Sushma S, Sahoo RK, Dutta TK. Etiology and outcome determinants of intracerebral hemorrhage in a south Indian population, A hospital-based study. Ann Indian Acad Neurol. 2012; 15:263-6.
15. Ariesen MJ. Risk Factors for Intracerebral Hemorrhage in the General Population. Stroke. 2003; 34(8):2060-5.
16. Sturgeon JD, Folsom AR, Longstreth WT, Shahar E, Rosamond WD, Cushman M. Risk factors for intracerebral hemorrhage in a pooled prospective study. Stroke. 2007; 38:2718-25.
17. Donnell MJ, Xavier D, Liu L, Zhang H, Chin SL, Rao-Melacini P, *et al.* Risk factors for is chaemic and intracerebral haemorrhage stroke in 22 countries (the INTERSTROKE study): a case-control study. Lancet. 2010; 376:112-3.

18. Fogelholm R, Nuutila M, Vuorela AL. Primary Intracerebral Haemorrhage in the Jyuaskyla region, Central Finland,1985-89: Incidence, case fatality rate and functional outcome. J Neurol Neurosurg Psychiatry. 1992; 55:546-52.
19. Mase G, Zorzon M, Biasutti E, Tusca G, Vitrani B, Cazzato G. Immediate prognosis of primary intracerebral hemorrhage using an easy model for the prediction of survival. Acta Neurol Scand. 1995; 91:306-9.
20. Srivastava T, Kochar DK, Joshi A. A prospective study of patterns of stroke in elderly populations at desert area of India. Wednesday Poster Sessions. Aug, 2003, PC-046.
21. Smith WS, Johnson SC, Hemphill JC. Cerebrovascular Disease. Harrison's Principal of Internal Medicine, McGraw Hill education, edition, 2585.