



ORIGINAL ARTICLE

## Clinical Profiles of Spontaneous Intracerebral Haemorrhage Patients: Experience of 100 Cases in Dhaka City

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### Abstract

**Background:** Clinical features are the important diagnostic tools for the detection of spontaneous intracerebral haemorrhage patients. **Objective:** The purpose of the present study was to see the clinical profiles of spontaneous intracerebral haemorrhage patients. **Methodology:** This cross-sectional study was conducted in the Department of Neurology at Dhaka Medical College and Hospital, Dhaka, Bangladesh from July 2012 to June 2014 for a period of two (2) years. Patients with spontaneous intracerebral haemorrhage who were admitted in the Departments of Neurology, Neurosurgery and Medicine at Dhaka Medical College and Hospital, Dhaka were selected as study population. Both male and female patients with the age group of  $\geq 18$  years, first ever spontaneous intracerebral haemorrhage and hospital admission within 48 hours of onset were included for this study. The clinical features of the study population were collected after admission of the patients like headache, hemiplegia or paresis, vomiting, and deterioration of consciousness, dysphasia, dysarthria and hemisensory loss. **Result:** Headache was observed the most frequent complaint in 81.0% (n=79) patients. Hemiparesis or hemiplegia was the most frequent focal neurological deficit in 69.0% (n=68) patients. Vomiting was common also 58.0% (n=57) patients. Twenty five (26.0%) respondents were presented with deterioration of consciousness. Dysphasia/aphasia was found in 15.0% patients. Convulsion was not a common presenting feature (7%). **Conclusion:** In conclusion headache, vomiting and deterioration of consciousness are the most common clinical feature of spontaneous intracerebral haemorrhage. [*Journal of Current and Advance Medical Research* 2018;5(2):64-67]

**Keywords:** Spontaneous intracerebral haemorrhage; clinical characteristics; stroke

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## Introduction

Stroke due to intracerebral haemorrhage without any trauma and underlying lesion is known as spontaneous intracerebral haemorrhage<sup>1</sup>. Spontaneous intracerebral hemorrhage (sICH) occurs as non-traumatic and without any underlying lesion which is often a devastating clinical event with limited effective therapies<sup>2</sup>. It accounts for approximately 10.0 to 15.0% of all strokes<sup>3</sup>. It presents with sudden focal neurological deficit or reduced level of consciousness after which it kills about half of those affected within one month and leaves most survivors disabled<sup>4</sup>. Case fatality has not been changed in spontaneous ICH over the past few decades<sup>5</sup>.

Spontaneous ICH associated with hypertension and amyloid angiopathy, is grouped as primary intracerebral haemorrhage<sup>6</sup>. Other causes of spontaneous ICH are vascular malformations, vasculitic disorders, Moyamoya disease, tumour haemorrhages, haemorrhagic infarcts, haemorrhagic diathesis and those associated with use of anticoagulant or fibrinolytic drugs<sup>7</sup>. Stroke clearly ranks first among all the neurologic diseases of adult, both in frequency and importance. At least half of the patients with a neurologic disorder attending general hospitals suffer from stroke<sup>8</sup>. Though intracerebral haemorrhage (ICH) accounts for approximately 10-20% of strokes, its importance derives from high mortality that varies between 25% to 60.0%<sup>9</sup>. The purpose of the present study was to see the clinical profiles of spontaneous intracerebral haemorrhage patients.

## Methodology

This cross-sectional study was conducted in the Department of Neurology at Dhaka Medical College and Hospital, Dhaka, Bangladesh from July 2012 to June 2014 for a period of two (2) years. Patients with spontaneous intracerebral haemorrhage who were admitted in the Departments of Neurology, Department of Neurosurgery and Department of Medicine, at Dhaka Medical College and Hospital, Dhaka were selected as study population. Spontaneous intracerebral haemorrhage was defined as neurological deficit documented by a brain CT indicating the presence of an intracerebral hemorrhage in absence of trauma or surgery. Both male and female patients with the age group of  $\geq 18$  years, first ever spontaneous intracerebral haemorrhage and hospital admission within 48 hours of onset were included for this study. Patients with haematoma secondary to head injury, patients

of ischaemic stroke and subarachnoid haemorrhage, patients underwent surgical or interventional procedure, unable to confirm by CT scan of head or serious co-morbidity like chronic kidney disease, heart failure, decompensated chronic liver disease, respiratory failure and metabolic encephalopathy and infection were excluded from this study. Patients having sICH were detected with the help of CT-scan of head. Patients with ischemic stroke were excluded. Those with sICH were selected for the study, after getting the informed consent. The clinical features of the study population were collected after admission of the patients like Headache, hemiplegia/paresis, vomiting, deterioration of consciousness, dysphasia or aphasia, dysarthria, behavioural abnormalities, convulsion, monoplegia and hemisensory loss. A detailed history was taken and a meticulous neurological examination was performed in every patient. CT scan of head was done on every patient at the department of radiology and imaging of Dhaka Medical College as early as possible for confirmation of spontaneous intracerebral hemorrhage. Data was taken from patient or attendant and medical record of the patient. The analyses were performed manually using standard statistical procedures. SPSS version 20 were utilized whenever required and also to cross-check the results. Prior to the commencement of this study, the research protocol was approved by the Research Review Committee.

## Result

A total number of 98 patients were included for this study after fulfilling the inclusion and exclusion criteria. Eighty two (84%) patients of the study subjects were more than 50 years of age. The youngest and eldest subjects aged 20 and 80 years, respectively. Mean ( $\pm$  standard deviation) age was  $64.01 \pm 13.90$  years (Table 1).

**Table 1: Age Distribution of the Study Population (n=98)**

Age Group	Frequency	Percentage
Less than 20 Years	1	1.02
21 to 40 Years	8	8.2
41 to 60 Years	23	23.4
More than 60 Years	66	67.3
<b>Total</b>	<b>98</b>	<b>100.0</b>

Table 2 shows the presenting features of the patients with spontaneous intracerebral haemorrhage. Headache was observed the most frequent complaint in 81% (N=79) patients. Hemiparesis/Hemiplegia was the next common

presenting feature and most frequent focal neurological deficit in 69% (n=68) patients. Vomiting was common also 58% (n=57) patients. Twenty five (26%) respondents were presented with deterioration of consciousness. Dysphasia/aphasia was found in 15% patients. Convulsion was not a common presenting feature, found in 7% respondents.

**Table 2: Distribution of the Presenting Features of the Respondents (n=98)**

Feature	Frequency	Percentage
Headache	79	80.61
Hemiplegia/paresis	68	69.38
Vomiting	57	58.16
Deterioration of consciousness	25	25.51
Dysphasia/aphasia	15	15.30
Dysarthria	11	11.22
Behavioural abnormalities	10	10.20
Convulsion	7	7.14
Monoparesis	3	3.06
Hemisensory loss	2	2.04

\*Multiple responses

## Discussion

There are several risk factors of spontaneous ICH. Hypertension is the most important risk factor for spontaneous ICH and the contribution of hypertension is greater for deep ICH than for lobar ICH<sup>10</sup>. Current smoking and heavy alcohol consumption are associated with increased risk of ICH. An Australian case-control study showed an inverse relationship between cholesterol level and the risk of ICH<sup>11</sup>. Another study found that low total cholesterol and Low-density lipoprotein cholesterol levels were associated with more severe ICH<sup>12</sup>. The use of warfarin increases the risk of ICH by two- to five-fold, depending upon the intensity of anticoagulation<sup>13</sup>. Anticoagulation-related ICH is nowadays increasing because of the increased use of oral anticoagulation in elderly population<sup>14</sup>. Antiplatelet therapy can increase the risk of ICH. Several case-control studies did not show an increased ICH risk with antiplatelet use; however, meta-analyses showed that antiplatelet therapy was associated with a small but significant increase in the ICH risk<sup>11</sup>. In addition, a meta-analysis showed that prior antiplatelet use was associated with an increased risk of death after the ICH and another studies demonstrated an increased risk of early

hematoma growth with prior antiplatelet use<sup>15</sup>. In particular, dual antiplatelet therapy compared to antiplatelet monotherapy is likely to further increase the ICH risk. In patients with atrial fibrillation, the risk of ICH is almost twice as high with aspirin plus clopidogrel compared to aspirin alone<sup>12</sup>.

Ninety eight patients of spontaneous intracerebralhaemorrhage (ICH) were included in this study. Most (84%) of the patients were of 50 years or more age. Mean ( $\pm$  standard deviation) age was  $64.01 \pm 13.90$  years. The age distribution was similar to that of most of the previous studies conducted in Bangladesh and India<sup>16-17</sup>. The youngest and oldest patients were of 20 and 80 years respectively. Number of males (60%) was more than that of females (40%) (M/F,1.50). Similar sex distribution was found in the study on spontaneous ICH patients in Heerlen, Netherlands<sup>18</sup>.

Headache was the most frequent presenting feature in 81.0% followed by hemiparesis/plegia in 70.0%, vomiting in 58.0% and deteriorated consciousness observed in 26.0% patients. Convulsion was not a common presenting feature, found in 7.0% patients. Siddique<sup>16</sup> and Al-Dahhan<sup>19</sup> found similar results in spontaneous intracerebral haemorrhage, though proportion of patients presenting with deteriorated consciousness was lower in this study. Less severe initial presentation of the respondents might explain this discrepancy.

Although some individuals develop ICH during exertion or sudden emotional stress, most ICHs occur during routine activity. The neurologic symptoms usually aggravate over minutes or a few hours. The most common site of ICH is the putamen, and clinical presentations vary by the size and location of ICH<sup>10</sup>. Common ICH symptoms are headache, nausea, and vomiting. Headache is more common in patients with large hematomas, and is attributed to traction on meningeal pain fibers, increased intracranial pressure, or blood in the cerebrospinal fluid. Small, deep hematomas are rarely associated with headache. Vomiting is reported in about 50% of patients with hemispheric ICH, and more common in patients with cerebellar hemorrhages. It is usually associated with increased intracranial pressure. Patients with large ICH often have a decreased level of consciousness due to increased intracranial pressure and compression of the thalamus and brainstem. Stupor or coma indicates large ICHs that involve the brainstem reticular activating system<sup>16</sup>. Seizures reported in about 10.0% of patients with ICH and about 50% of patients with lobar hemorrhage. Seizures typically

occur at the onset of bleeding or within the first 24 hours<sup>11</sup>.

Neurological deterioration is common before and during hospital admission and may indicate early hematoma enlargement or worsening of edema<sup>1</sup>. Patients with a supratentorial ICH involving the basal ganglia or thalamus have contralateral sensorimotor deficits. Lobar hemorrhages may present with symptoms of a higher cortical dysfunction such as aphasia, neglect, gaze deviation, and hemianopia. In patients with an infratentorial ICH, signs of brainstem dysfunction occur such as ocular motor or other cranial nerve abnormalities, and contralateral motor deficits<sup>2</sup>. More than 40.0% of patients with CAA-associated ICH have some degree of cognitive dysfunction, and the cognitive changes may precede the ICH in some cases<sup>15</sup>.

## Conclusion

In conclusion headache is the most common presentation of spontaneous ICH. Vomiting is also reported in a large number of patients. Furthermore, deterioration of consciousness is also a very important clinical feature of spontaneous ICH. Moreover hemiplegia or paresis, dysphasia or aphasia and dysarthria are also reported in majority of the patients. Further large scale study in multicentre basis should be carried out.

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