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FINDING OUT OF THE FREQUENCY OF CASES WITH ACUTE THUNDERCLAP HEADACHE AMONG PATIENTS ATTENDING RAILWAY GENERAL HOSPITAL RAWALPINDI

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Abstract:
Objective: *To find out the frequency, results after diagnose and follow up of those patients who attend Railway General Hospital Rawalpindi due to sudden thunderclap headache.*
Methodology: *The duration of this study was from February 2019 to January 2020 conducted in Railway General Hospital Rawalpindi. A total subject of 22,000 reported to of which 128 patients appeared with acute sudden thunderclap headache. Among those patients, 78 (60%) female and 50 (39%) males with 15-80 years age (46±10 as mean age). Facilities included lab investigation, medical examination/treatment, ICUs for observation, and follow-up of patients. For intensive studies, brain/LP were properly examined with 1-month review after discharge.*
Results: *After examining 120 cases, 15.60% patients (20) suffered from SAH (Subarachnoid haemorrhage), 5.40% patients (7) from cerebral infarction, 3.90% patients (5) from aseptic meningitis, and 3.90% patients (5) from Intra-cerebral Haematoma. Only 1.50% (2) patients reported with cerebral edema and 0.80% (1) case with venous sinus thrombosis. Patients with no findings/follow up 69.01% (88) were noted under idiopathic thunderclap headache. Similar <3 episodes were present in 25.79% (33) patients.*
Conclusion: *Severe cases of Thunderclap Headache are common. All the above diseases are not uncommon and must be categorised either organic or benign headache. Patients suffering from such diseases be hospitalized for brain CT scan for further recommendation.*
KEYWORDS: *Idiopathic Thunderclap Headache (ITH), Severe Thunderclap Headache (STH), Lumber Puncture (LP), Intensive Care Unit (ICU), Cerebral Venous Sinus Thrombosis (CVST).*

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INTRODUCTION:

Patients with TH observe this predicament often resulting an urge for abrupt treatment. BH may produce threats to life like SAH with a breakdown of arterial dissection/aneurysm. TH occurs so unexpectedly abrupt with intense explosive aching like clap of a thunder. This term was given to describe a headache with a cerebral aneurysm which is un-ruptured [1]. Similarly, 'Thunderclap Headache' also describes migraine, SAH, Hypertensive encephalopathy, idiopathic BH disorder and CVST. SAH has tendency to turn into subarachnoid bleed mong ten to 50% patients. Distinguish factors between SAH and idiopathic Thunderclap Headache cannot be called reliable until diagnosed through evaluation [2]. TH requires abrupt evaluation because it is a clinical emergency. Subarachnoid blood can easily be detected through in-time CT. If the results appear to be '–ve', LP must be processed. Spectrophotometer is used to check xanthochromia after twelve hours to 2 weeks of the commencement of LP to find SAH with test accuracy of 95% [3]. Further investigation for an un-ruptured intracranial aneurysm can be misleading in patients with negative results of CSF, CT and normal neurological. MR angiography is further suggestion is some cases. After the investigation negates all other possible reasons, TH can be appropriately diagnosed.

METHODOLOGY:

The design of this Descriptive Observation' within the setting of Railway General Hospital Rawalpindi. The duration of this study was from February 2019 to January 2020. Each patient with STH was the subject of our research. Patients with previous STH attacks were excluded. Patients were examined (neurological/clinical) and verified by Medical Officer and Consultant respectively. After that, lab test (Blood sugar, urea, ESR, Urine analysis, and blood count) were recorded. Subjects stayed under treatment, observation and follow-up in wards/ICU. Brain LP/CT scan of all participants were recorded. Samples of CSF were recorded and handed over to lab for examination (naked eye/pressure signs). Samples went through Biochemical, Xanthochromia test and Micro/Bio-chemical examinations. Follow-up was scheduled at fourth week. Data presentation was made as ± SD (mean) and results were finalized in percentage.

RESULTS:

Over the span of the year, less than 1% (128) patients among 87095 had acute STH). Among those patients, 78 (60.10%) female and 50 (39.1%) males with 15-80 years age (46±10 as mean age). Follow-up during days of admission was 2 to 14 days and after being discharged, 4 weeks. Table-I shows distribution of age whereas Table-II finalized results. Similar < 3 episodes were present in 25.79% (33) patients. Among 88 patients with history of headache, 91% (30) out of 33 had experienced BH, 9% (3) patients with organic causes, and 42% (37) patients diagnosed with Migraine. Among 15% (20) patients with physical workload causes, 4 patients were diagnosed with SAH. Among 36% (46) patients of headache due to emotional fatigue, only 7 were diagnosed with SAH. Patients with positive results experienced decreased consciousness, continual vomiting, nausea, stiffed neck and occipital location.

Table-I: Distribution of Patients (Age-Wise) (n=128)

Age (Years)	Number of Cases	Percentage
25 – 30	18	14
31 – 45	38	30
46 – 60	50	39
65 – 80	22	17

Table-II: Diagnostic outcome Population (n=128)

Diagnosis	Number of Cases	Percentage
Subarachnoid Hemorrhage	20	15.6
Cerebral infarction	7	5.4
Intracerebral Hematoma	5	3.9
Aseptic meningitis	5	3.9
Cerebral edema	2	1.5
Venous sinus thrombosis	1	0.8
Idiopathic thunderclap headache	88	69

Among 88 cases labelled as ITH, only 64% (56) turned back for review with negative reports of TH experience.

DISCUSSION:

The research studied a huge number (22,542) patients where only less than 1% of were diagnosed with acute TH [4]. Only 15.60% of patients turned out to be caused by SAH after follow-up while 31.0% had organic reasons [5]. Although there exist researches in the literature related to TH all over the world, but this subject is scarcely touched in Pakistan. Ahmad & Habib conducted study on SAH during six years with 6 ratios 2, male to female ration and 38.01% results [6,7]. Another paper (of Rashid et al, Lahore) shows intracranial aneurysms to be the most common reason for SAH [8,9].

The purpose of their study was to find cases of this headache around the Willis. Their results conclude ACoA (succeeded by MCA&PCA) to be the most common (80%) aneurysm. An average of 10 SAH cases has been recorded in most studies. Some relevant researches recorded incident number of 10/100000/year. Patients experienced SAH had relatively less average of age. Gender wise, female's risk tendency of SAH was 1.60 times more than males [10]. Similarly, Black race risk was 2.10 times more than white race. The percentage of un-rupted intracrania aneurysm is 3.6 to 6 in general people. This leads to the question whether reports of aneurysm are incidental or a saccular aneurysm (unruptured) can exist with TH negative results of CT scan reports [11]. The research importance increases the severity of pain among almost 12% of subjects. In a survey, 7/1100 patients having symptoms of aneurysm were diagnosed with TH. Another survey reported fifty-two (9.30%) out of 562 with cerebral aneurysms having normal CSF/CT scan with sudden SH. CVST includes headache as common most symptom [12,13]. TH patients (up to 10.01%) possess features of CVST. Subjects having CVST (25.0%) resulted with normal CT scan. Isolated Intracranial hypertension in patients increased this number to 50% and (less than) 10% among Focal neurological patients. Headache is one of the common symptoms for internal carotid artery dissection too. Headache starts sudden and severe among 12.99% of patients [14]. Due to less revealing results, CT and LP is being replaced by MR angiography. A study also shows four or 14% (out of 28) patients were diagnosed with TH having Spontaneous Intracranial Hypotension. At the end, reports of pituitary apoplexy revealed patients with TH without any positive CSF/CT/Clinical examinations [15]. Current literature research shows ITH association with angiography (diffuse segmental vasospasm. Results consider ITH to be taken as a kind of migraine. A research of seventy-one TH patients showed no signs of SAH among those patients. Four studies on 226 TH patients were reported with no SAH or death after 12 months follow up. Outcomes of our research shows consistency with other studies of the world on the same topic [16]. Our research showed eighty-eight (69.0%) patients of TH had unspecific and only twenty (15.0%) suffered from SAH. Some studies presented 11% cases of SAH. Our research also reported VST (0.80%), aseptic meningitis (3.90%), intra-cerebral haemorrhage (5.40%) and cerebral edema (1.50%) resulting TH [17]. Due to prevalence, intracranial aneurysm is always < 3.60%-6.01%. Due to limited resources, all possible secondary diagnosis was reported under ITH after proper examination and investigation.

CONCLUSION:

TH is a common headache examined by House doctors in Dept. of Casualty and SAH and such diseases must be included in non-specific conditions. All patients with underlying diseases must be examined, investigated, admitted and treated with adequate follow-ups. Patients with ITH must be investigated further to acknowledge natural reasons for their condition.

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