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Research Article

**DEMOGRAPHICAL, CLINICAL AND ETIOLOGICAL PROFILE OF
PATIENTS WITH NON TRAUMATIC COMA AT TERTIARY CARE
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Dr. Hamid Nawaz Ali Memon³, Dr. Najeeb Ullah Ansari⁴, Dr. Abdul Subhan Talpur¹,
Dr. Zulfikar Ali Qutrio Baloch⁵ and Dr. Muhammad Ayyaz⁵**¹ Department of Medicine, Liaquat University of Medical and Health Sciences (LUMHS) Jamshoro² Jinnah Postgraduate Medical Centre JPMC Karachi³ Zulekha Hospital, Dubai United Arab Emirates⁴ New Bilawal Medical College, LUMHS Jamshoro⁵ Brandon Regional Hospital Brandon, Florida, U.S.A**Abstract:**

Objective: To study the demographical, clinical and etiological profile of patients with non traumatic coma (NTC) at tertiary care hospital.

Patients and Methods: This study of cross sectional type was conducted at tertiary care hospital and included patients of ≥ 11 years of age, either gender with history of or presentation with non traumatic coma were further explored and evaluate for its etiology. After detail history and clinical examination the relevant and specific examination were advised includes blood complete picture, sugar level, liver function test, thyroid profile, malaria parasite test / ICT malaria, drug / intoxication screening, electrolytes, urea and creatinine, CT and MRI scan, CSF analysis, EEG, electroencephalography, viral hepatitis profile and blood, urine culture and sensitivity while the data was collected on pre-designed proforma and analyzed in SPSS 16. The frequency and percentages was calculated while the numerical statistics were used to compute mean \pm SD.

Results: In this study fifty consecutive patients of non traumatic coma were recruited and studied. The mean \pm SD for age (years) and duration of illness (days) for whole population was 25.98 ± 8.85 and 15.83 ± 4.63 with male gender predominance 32 (64%). The cerebro-vascular accidents was the commonest causes of non-traumatic coma 17 (34%), other etiological factor found were cerebral malaria 10 (20%), hepatic coma 4 (8%) and diabetic ketoacidosis 4(8%).

Conclusion: The cerebro-vascular accidents were the commonest causes of non-traumatic coma, thus the adequate knowledge for common causes of NTC and proper work-up for the evaluation of NTC may improve the outcome.

Key words: Non traumatic coma, COMA, Cerebrovascular accident, Malaria and Glasgow coma scale.

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INTRODUCTION:

The term coma in Greek means deep sleep.[1] In the world of improved resuscitation measures, management and supportive systems one of the major health burden faced by clinical neurologist is the evaluation of the patient during the state of altered level of sensorium and coma.[2-4]

Evaluation of the coma patient is always a medical emergency and initially is to identify the cause and second is to manage the state of coma and thirdly to identify the pathological mechanisms causing the degree of brain failure (severity) and finally prevent the brain from the irreversible damage.[5, 6] Beside this evaluation of those individuals in whom the prognosis is worst and hopeless and for whom the modern resuscitative measures will be helpless and serve only to increase and prolong the anguish of the relatives of individuals.[7,8]

The comatose patient is one of major neurological issue that a health care provider encounters during emergency in health setups. [9] Due to the increasing era and measures to explore the etiology of non traumatic coma, prediction of outcome in these patients is difficult and unfortunately clinical, laboratory or electrophysiological parameter are not sufficient to explore and predict their outcome.[10]

Therefore this study will focus on clinical profile of patients with non traumatic coma (NTC) admitted in tertiary care hospital Hyderabad with an objective to have a systematic clinical approach to such patients.

PATIENTS AND METHODS:**Table 01: The Demographical and Clinical Parameters of the Patients**

AGE (years)	FREQUENCY (N=50)	PERCENTAGE (%)
11-19	10	20
20-29	10	20
30-39	09	18
40-49	08	16
50-59	07	14
60+	06	12
GENDER		
Male	32	64
Female	18	36
RESIDENCE		
Urban	10	20
Rural	40	80
GLASGOW COMA SCALE (GCS)		
3	24	48
4	20	40
5	03	06
6	02	04
7	01	02
DURATION OF ILLNESS		
≤2 weeks	26	52
> 2 weeks	24	48

This one year cross sectional study includes the patients presenting with a comatose condition hadn't history of any trauma presented at tertiary care hospital Hyderabad. All patients of ≥ 11 years of age, either gender and found to be in a comatose condition i.e. the patient appears to be asleep and is at the same time incapable of being aroused by external stimuli or inner need will be recruited and explored further after the informed consent from the attendants or next to kin while the exclusion criteria were the patients presenting in comatose condition with history of trauma. After detail history and clinical examination the relevant and specific examination were advised includes blood complete picture, sugar level, liver function test, thyroid profile, malaria parasite test / ICT malaria, drug / intoxication screening, electrolytes, urea and creatinine, CT and MRI scan, CSF analysis, EEG, electroencephalography, viral hepatitis profile and blood, urine culture and sensitivity. The data was collected on pre-designed proforma while manipulate in SPSS 17 by gaining the frequencies and percentages for categorical variables whereas the mean \pm SD for numerical variables.

RESULTS:

In this study fifty consecutive patients of non traumatic coma were recruited and studied. The mean \pm SD for age (years) and duration of illness (days) for whole population was 25.98 ± 8.85 and 15.83 ± 4.63 with male gender predominance 32(64%). The demographical, clinical and etiological profile is shown in Table 1 and 2.

Table 02: The Etiological Profile of Patients with Non Traumatic Coma

ETIOLOGY	FREQUENCY (N=50)	PERCENTAGE (%)
Cerebrovascular accident (CVA)	17	34
Bacterial meningitis	03	06
Viral encephalitis	02	04
Cerebral malaria	10	20
Hyperosmolar coma	03	06
Diabetic ketoacidosis (DKA)	04	08
Myxoedema coma	01	02
Hepatic encephalopathy	04	08
Uremic encephalopathy	02	04
Hypertensive Encephalopathy	02	04
Poisoning / intoxication	02	04

DISCUSSION:

The present study comprised of fifty consecutive patients identified as non traumatic coma. 70% were males and 30% females.

A large multi-centre study of five hundred patients found that metabolic etiology constituted 66% while structural origin comprising 34% for the etiology of coma.⁷ The Indian study of two hundred individuals observed dominance of structural lesions for coma (60%).^[11] Moreover, two former studies didn't have facilities of CT scan and MRI, however its worth mentioning that, the priorities for preventive and therapeutic aspects of coma needs a different emphasis in the developing world.^[12, 13] Former studies conducted in the African continent observed that cerebral malaria was the commonest etiology for coma (60%).^[14, 15] However in our study, we found 10 (20%) case of cerebral malaria responsible for coma. In previous study, 52% of patients with non traumatic coma were in a persistent vegetative state and 30% have mortality,^[16] while in our study the mortality was reported as 35%. The outcome of subjects with coma depends not only on the severity of neurologic damage but also on the duration of the illness and associated medical disorders.^[17] Thus the outcome is influenced by three major clinical factors etiology of coma, severity of coma (GCS) and the duration of illness.³⁵ Although the metabolic origin of coma have a better outcome.^[18, 19] In present study the cerebrovascular accident (CVA) was identified in 17 (34%) patients and is consistent with the study by Horsting MW, et al. ^[20] The hepatic and uremic coma comprising 4(8%) and 2(4%) of the patients. The hepatic coma develops either as an inexorable stage in progressive hepatic failure or due to a precipitating factor of hepatic encephalopathy and in our study the common etiology found for hepatic coma was chronic viral hepatitis.

In present study the diabetic ketoacidosis (DKA) consists of 8% of the patients whereas mean \pm SD for GCS of the individuals of present study was

4.00 \pm 1.00 respectively. Our finding is in accordance with former study found mortality rates of 35% in patients with mean \pm SD GCS 4.00 \pm 2.00 and none could make good or moderate recovery. ^[21] The literature has shown that to survive severe brain injury, a reasonably intact brain stem function is essential. ^[22] Thus it can be safely stated that absence of brainstem reflexes directly proportional to poor prognosis and several factors can be taken into account to predict the outcome of coma. ^[23]

CONCLUSION:

The present study concluded that cerebro-vascular accidents was the commonest causes of non-traumatic coma 17 (34%), other etiological factor found were cerebral malaria 10 (20%), hepatic coma 4 (8%) and diabetic ketoacidosis 4(8%) with male population predominance 32(64%). The less Glasgow coma score (<5) at the onset of coma has a worst prognosis while the absence of brainstem reflexes was also directly proportional to poorer prognosis.

REFERENCES:

1. Bruno MA, Laureys S, Demertzi A. Coma and disorders of consciousness. *Handb Clin Neurol*. 2013;118:205-13.
2. Kanji HD, Mithani S, Boucher P, Dias VC, Yarema MC. Coma, metabolic acidosis, and methemoglobinemia in a patient with acetaminophen toxicity. *J Popul Ther Clin Pharmacol*. 2013;20(3):e207-11.
3. Barlow P. A practical review of the Glasgow Coma Scale and Score. *Surgeon*. 2012 Apr;10(2):114-9
4. Forsberg S, Hojer J, Ludwigs U. Prognosis in patients presenting with non-traumatic coma. *J Emerg Med*. 2012 Mar;42(3):249-53.
5. Grote S, Bocker W, Mutschler W, Bouillon B, Lefering R. Diagnostic value of the Glasgow Coma Scale for traumatic brain injury in 18,002 patients with severe multiple injuries. *J Neurotrauma*. 2011 Apr;28(4):527-34

6. Brown EN, Lydic R, Schiff ND. General Anesthesia, Sleep, and Coma. *N Engl J Med*. 2010 Dec 30; 363(27): 2638–2650.
7. Bordini AL, Luiz TF, Fernandes M, Arruda WO, Teive HA. Coma scales: a historical review. *Arq Neuropsiquiatr*. 2010 Dec;68(6):930-7
8. Wijdicks EF. The bare essentials: coma. *Pract Neurol*. 2010 Feb;10(1):51-60
9. Bauer G, Trinka E. Nonconvulsive status epilepticus and coma. *Epilepsia*. 2010 Feb;51(2):177-90.
10. Sharma S, Kochar GS, Sankhyan N, Gulati S. Approach to the child with coma. *Indian J Pediatr*. 2010 Nov;77(11):1279-87.
11. Sinclair JR, Watters DA, Bagshaw A. Non-traumatic coma in Zambia. *Trop Doct*. 1989, Jan 19(1) : 6-10
12. Haupt WF, Hansen HC, Janzen RW, Firsching R, Galldiks N. Coma and cerebral imaging. *Springerplus*. 2015; 4: 180.
13. Nayebaghayee H, Afsharian T. Correlation between Glasgow Coma Scale and brain computed tomography-scan findings in head trauma patients. *Asian J Neurosurg*. 2016 Jan-Mar; 11(1): 46–49.
14. Milner DA, Whitten RO, Kamiza S, Carr R, Liomba G, Dzamalala C, et al. The systemic pathology of cerebral malaria in African children. *Front Cell Infect Microbiol*. 2014 Aug 21;4:104
15. Murphy SC, Breman JG. Gaps in the childhood malaria burden in Africa: cerebral malaria, neurological sequelae, anemia, respiratory distress, hypoglycemia, and complications of pregnancy. *Am J Trop Med Hyg*. 2001 Jan-Feb;64(1-2 Suppl):57-67.
16. Andrews BT, Chiles BW, Olsen WL. The effects of intracerebral haematoma location on the risk of brainstem compression and outcome. *J. Neurosurg*. 1988;69 : 518.
17. Matuja WB, Matekere NJ. Causes and early prognosis of non-traumatic coma in Tanzania. Muhimbili Medical Centre Experience. *Trop Geogr. Med*. 1987, Oct 39(4) : 330-5.
18. Khanal K, Bhandari SS, Shrestha N, Acharya SP, Marhatta MN. Comparison of outcome predictions by the Glasgow coma scale and the Full Outline of UnResponsiveness score in the neurological and neurosurgical patients in the Intensive Care Unit. *Indian J Crit Care Med*. 2016 Aug; 20(8): 473–476.
19. Mauritz W, Leitgeb J, Wilbacher I, Majdan M, Janciak I, Brazinova A, et al. Outcome of brain trauma patients who have a Glasgow Coma Scale score of 3 and bilateral fixed and dilated pupils in the field. *Eur J Emerg Med*. 2009 Jun;16(3):153-8.
20. Horsting MW, Franken MD, Meulenbelt J, van Klei WA, de Lange DW. The etiology and outcome of non-traumatic coma in critical care: a systematic review. *BMC Anesthesiol*. 2015 Apr 29;15:65.
21. Sternbach GL. The Glasgow coma scale. *J Emerg Med*. 2000 Jul;19(1):67-71
22. Parvizi J, Damasio AR. Neuroanatomical correlates of brainstem coma. *Brain*. 2003 Jul;126(Pt 7):1524-36
23. Dhanwate AD. Brainstem death: A comprehensive review in Indian perspective. *Indian J Crit Care Med*. 2014 Sep; 18(9): 596–605.