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ASSESSMENT OF DEMOGRAPHIC PROPHILE AND GLASSGOW COMA SCALE IN HEAD INJURY CASES ADMITTED IN TERTIARY LEVEL HOSPITAL OF SOUTHERN RAJASTHAN

General Surgery

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ABSTRACT

BACKGROUND; Head injury cases are very common now a days, which lead to several morbidity and mobility. Hence this study was conducted to assess demographic profile and glassgow coma scale of patients to implement proper measures to prevent it.

METHODOLOGY; this study was conducted in surgery and neurosurgery ward of MB Hospital in Udaipur, Rajasthan. It was a time bound prospective study, performed in 100 patients.

RESULTS; Head injury is most commonly seen in younger age group. Male are affected more commonly than female which may be due to the fact that males have more outdoor activities. RTA was most common cause for head injury. Mild head injury (GCS 14-15) was present in more than half cases, moderate head injury (GCS 9-13) and severe head injury (GCS<8) were present in nearly quarter of these cases each.

KEYWORDS

INTRODUCTION-

Any injury that results in trauma to the skull or brain can be classified as a head injury. Head trauma is a leading cause of death in children and young adults. Traumatic brain injury classified as mild, moderate, and severe for patient with a history of head trauma. Classification1 is as follows:

a. Severe if Glasgow coma scale score is <8
b. moderate if between 9 to 13 and
c. mild if score is 14 to 15

Glasgow coma scale score:

Motor response	Score	Verbal response	Score	Eye opening	Score
Obey commands	6	Oriented	5	Open spontaneously	4
Localized	5	Confused	4	Open to speech	3
Withdraws to pain	4	Inappropriate words	3	Opens to pain	2
Flexor posturing	3	Unintelligible sounds	2	No eye opening	1
Extensor opening	2	No sounds	1		
No movements	1				

Add the three score to obtain the Glasgow coma scale (GCS) score, which range from 3 to 15. Add 'T' after the GCS of intubated and no verbal score is possible for these patients, the GCS score range from 3t to 10 t. [2]

Diagnosis:

Computed Tomography (CT) has become the diagnostic modality of choice for head trauma due to its accuracy, reliability, safety, and wide availability.

Initial assessment:

The 1st three element of the ABCD of resuscitation airway, breathing and circulation must be assessed and stabilize. Motor activity, speech and eye opening can be assessed in a few seconds and Glasgow coma score scale is calculated.

MATERIAL AND METHODS

Source of data:

All patients which were admitted to the Surgery and Neurosurgery ward in MB Govt. Hospital, RNT Medical College, Udaipur with head injury prospectively.

METHOD OF DATA COLLECTION

This was a time bound prospective study in which patient presenting with clinical suspicion of head injury in MB Govt. Hospital, RNT Medical College, Udaipur were taken into study.

Patient subjected to detailed history and thorough physical examination, Glasgow scaling, and radiological examination. Patient underwent necessary investigation like Blood counts, biochemical and urine analysis, X-ray skull and chest/abdomen, NCCT head. All head injury patient were evaluated for conservative and surgical management. In all cases, operative finding and post operative diagnosis was recorded. Final outcome was evaluated.

Inclusion criteria;

Head trauma patient undergoing conservative and surgical management will be included.

OBSERVATIONS-

Table 1: DISTRIBUTION OF PATIENTS ACCORDING TO AGE GROUP AND GENDER

Age group (yrs)	Operated group (n=30)		Conservative group (n=70)		Total	
	No.	%	N0.	%	No.	%
1-10	1	3.33	8	11.42	9	9
11-20	6	20	15	21.42	21	21
21-30	8	26.66	18	25.71	26	26
31-40	4	13.33	10	14.28	14	14
41-50	5	16.66	8	11.42	13	13
51-60	3	10	6	8.57	9	9
61-70	2	6.66	2	2.85	4	4
71-80	1	3.33	2	2.85	3	3
81-90	0	0	1	1.42	1	1

	Operated (n=30)		Conservative(n=70)		Total	
Sex	No.	%	No.	%	No.	%
Male	23	76.66%	48	68.57	71	71
Female	7	23.33	22	31.42	29	29

Table2. DISTRIBUTION OF PATIENTS ACCORDING TO PLACE OF ACCIDENT

Place of accident	Operated(n=30)		Conservative(n=70)		Total	
	No.	%	No.	%	No.	%
Road	20	66.66	45	64.28	65	65
Home	8	26.66	13	18.57	21	21

Public place	1	3.33	9	12.85	10	10
Railway station	1	3.33	0	0	1	1
Play ground	0	0	3	4.28	3	3

Table 3: DISTRIBUTION OF PATIENTS ACCORDING TO HISTORY (mode of injury)

Mode of injury	Operated group (n=30)		Conservative group(n=70)		Total	
	No.	%	No.	%	No.	%
RTA	18	60	40	57.14	58	58
Fall from height	7	23.3	14	20	21	21
Assault/beaten	0	0	6	8.57	6	6
Slip(fall from own level)	3	10	3	4.28	6	6
Pedestrian	1	3.33	4	5.71	5	5
Fall of object over head	1	3.33	1	1.42	2	2
Fall in well	0	0	1	1.42	1	1
Bull horn	0	0	1	1.42	1	1

Table 4: GLASSGOW COMA SCALE SCORE OF PATIENTS.

GCS	Operated (n=30)		Conservative(n=70)		Total	
	N0.	%	No.	%	No.	%
1-5	5	16.66	0	0	5	5
6-10	18	60	16	22.85	34	34
11-15	7	23.33	54	77.14	61	61

RESULTS

Most common age group operated for head injury 21-30 yrs (26.66%). Most common age group managed conservatively for head injury 21-30 years (25.71%). Most common age group undergoing head injury was 21-30.71% of total head injury patient were male (29% female). In operated group male were 76.66% and 68.57% in conservatively managed group.

Most common place of accident in operated group (66.66%) and conservative group (64.28%) was road followed by home (26.66% and 18.57% respectively). Most common cause of head injury RTA (58%) followed by fall from height (RTA >fall from height>assault =slip>pedestrian)

61% of total head injury patient show GCS 11-15 and 5% show GCS 1-5.60% of operatively managed patient show GCS 6-10 at presentation and 16.16% show 1-5.77.14% of conservatively managed patient show GCS 11-15.Out of 61 cases with GCS 11-15 only 7 (11.47%) required operation. When GCS was 6-10 out of 34, 18 (52.94%) required operation. In GCS 1-5, all 5 cases required operation.

DISCUSSION-

Age incidence-The maximum number of cases of head injury were between 11-30 yrs age group which was 47%. Most common age group operated upon was 21-30 yrs (26.66%) and most common age group managed conservatively was also 21-30 yrs (25.71%). Study conducted by Jain (1972) found that 80% of head injury cases were seen in first three decade of life (it was 56% in this study). Voris et al.[13] (1940), Barr and Ralston (1964), Hooper (1966), Selecki et al. (1968) and Devadiya and Jain (1969) found that first three decade of life was the most common age group affected by head injury (80%). Ahmed et al. (2014) found 21-30 yrs and 31-40 yrs age group (32.81% each) were the most common age group affected. Agarwal D et al. (2016) found 20-40 yrs age group most commonly affected by head injury (43%).

The present study corroborate with the finding of above studies because our cases were also maximum in first three decade of life corroborate to the finding of Jain (`1972), Purswani (1984), Gupta (1978), Ahmed(2014) and Agarwal (2016). This may be because of the fact that in this age group people are most active especially in outdoor.

Sex Incidence- There was a distinct predominance of males in all series described both in India and other part of the world. In this study male incidence of head injury was 71%. Study conducted by Purswani (1984) found male cases 77% and female 25%. Gupta (1978) found male cases 82.14%. Ahmed et al (2017) found incidence of male pt. of head injury 71.87%. Agrawal D et al. (2016) found 71.4% male cases of head injury in their study. Farzaneh E et al. (2017) found 71.6% male cases in their study.

The present study corroborate with the finding of Purswani (1984), Gupta (1978), Agarwal (2016) and Farzaneh (2017). This is because of the fact that males are usually having more outdoor activities and exposed to exterior more than female.

Mode of injury- In this study most common cause of head injury was RTA (63%), than fall 27% (fall from height 21% and fall from own level 6%) and assault 6%. Jain (1972) found that fall was responsible for 67% of head injury cases and was most common group in etiology of head injury. RTA was in second place (21.8%), followed by cases due to assault (6%). Purswani (1984) found accidental fall most common cause of head injury (49%), followed by RTA (32%) and assault 14%. Agrawal D et al. (2016) found RTA as most common cause of head injury (64%). Farzaneh et al. (2017) found 42.2% cases of head injury due to RTA.

The present study corroborate with the finding of Rowbotham (1945), Lewin (1954), Condon (1963), Potter (1967), Agarwal (2016) and Farzaneh (2017).

Place of accident-The maximum incidence of head injury was on road (65%), followed by home, public place, railway station and play ground as 21, 10, 1 and 3 % respectively. Jain (1972) found that incidence of head injury cases at home was 63.1%, on road was 23.6% and at play ground was 3%. Barr and Relston (1964) found 15% head injury at home and 66.8% on road. Steadman and Graham (1970) found 17% head injury at home and 64% on road. Lewin (1954), Barr and Ralston (1964) and Selecki et al. (1967) reported an incidence of 8-11% of head injury on play ground.

The present study corroborate with the finding of Barr and Relston (1964) and Steadman and Graham (1970).

Glassgow coma scale score- In this study, 61 out of 100 cases have GCS 11-15. Out of 61 cases with GCS 11-15, only 7 (11.47%) required operation. When GCS was 6-10 out of 34, 18 (52.94%) required operation. In GCS < 5, all 5 cases required operation. It show that with increasing glassgow coma scale, the number of operation required decrease and many cases recover by conservative treatment. Al-Kuwaiti et al. (2012) found GCS 14-15 in 82.2%, GCS 9-13 in 5.7% and GCS < 8 in 12.1% of cases. Salem et al. (2013) found GCS 14-15 in 69.94%, GCS 9-13 in 8.92% and GCS < 8 in 21.42% of cases. Aenderl et al. 11(2014) found GCS 14-15 in 50%, GCS 9-13 in 14% and GCS < 8 in 36% of cases. Nayebaghayee et al.(2016) found GCS 14-15 in 77%, GCS 9-13 in 11% and GCS < 8 in 11.9% of cases.

CONCLUSION- Head injury is most commonly seen in younger age group. Male are affected more commonly than female which may be due to the fact that males have more outdoor activities. RTA was most common cause for head injury. Mild head injury (GCS 14-15) was present in more than half cases, moderate head injury (GCS 9-13) and severe head injury (GCS<8) were present in nearly quarter of these cases each.

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