

The Common Age Range of the Highest Incidence Rate of Traumatic Brain Injury As Risk Factor is Different Between Areas

^{1*}Dr Abdulhamid Mohamed, ²Dr Chen Bo PhD

¹professor Li Qiao Yu (Head Of Neurosurgery Department Of Zhenjiang First Peoples' Hospital);

² (Chief Of Neurosurgery ICU In ZJFPH); Dr Fan Li Gang (Phd Candidate).

Corresponding Author: *Dr Abdulhamid Mohamed

Abstract

Objective: proofing that each area has its own common age range group as risk factor to head injuries by specifying common age range having highest incident rate to traumatic brain injury at Zhenjiang city in Jiangsu province in Peoples' Republic of China.

Methodology: The data of 2373 patients at Zhenjiang first peoples' hospital, admitted as head injury is analyzed in comparative manner. The patients' ages were the most focused information and matter of comparison. The whole number of patients' data is analyzed. No sampling methodology is used. Simple and clear statistical methodology is used like data tabling, percentile, charting and mean measurement.

Results: A mean of 396 patients are admitted at hospital for each year because of trauma to head. The common age range that lie 66% of patients is from age 41 years old patients to 70 years old patients. While ages younger than 40 years represented only 21.5% of the patients. As 71 years old and older are only 12.5% of traumatic brain injuries admitted at hospital in last six years.

Conclusion: Common age range of head injury incidence is different from area to another. Most common age range of head injury incidence in Zhenjiang area is from 55 years old to 65 years old. Specific area related studies is recommended to define the highest common age range of incidence for head injury.

Keywords: Traumatic, Brain Injury, Head Injury, Risk Factor, Common Age Range

Date of Submission: 01 -09-2017

Date of acceptance: 30-09-2017

I. Introduction

The terms *traumatic brain injury* and *head injury* are often used interchangeably in the medical literature.[1] Head injuries include both injuries to the brain and those to other parts of the head, such as the scalp and skull.[2] A head or traumatic brain injury may be caused when an external force is sufficient enough to cause movement of the brain within the skull or causes the skull to break, thereby inducing a direct injury to the brain. The former is more likely to occur following road traffic accidents, falls, violent acts such as striking or hitting with an iron rod and sports activities.[3] A majority of the head injuries (50%) are the result of road traffic accidents involving motorbikes, automobiles and bicycles. Pedestrians are not spared either. Transportation accidents are in fact the leading cause of head injuries in those under 75 years of age. Driving under the influence of alcohol or drugs is to a large extent responsible for such road traffic accidents (50%). [3] In persons above the age of 75 years, falls account for a major proportion of head injuries. Other less common causes include violence, such as gunshots, firearm assaults, and child abuse. This accounts for approximately 20% of TBIs. Sports injuries are responsible for 3% of head injuries. Less commonly, conditions such as drowning, cardiac arrest can also lead to head injuries.[3]

TBI occurs twice as often in men as in women.[4]

Populations at a higher risk include the following age groups:

- Individuals between the ages of 15 and 24 years
- Individuals age 75 and older [4]

This last statement is point of this study which clarifies that each population area have specific age group who are more incident than others to this health problem.

The last six years, from 2011 to 2016, traumatic brain injury patients' data admitted at Zhenjiang First Peoples' Hospital is analyzing to notice exact common age group having highest incident to traumatic brain injury.

The severity of the head injury may range from minor, with few or no lasting consequences, to major, resulting in profound disability or death.[4]

Although any injury to the brain is serious, and severe damage can be fatal, medical and surgical advances have improved the odds for surviving a TBI. Nevertheless, coping with the life-changing consequences of traumatic brain injury presents a great challenge for patients, families, physicians, therapists, and society.[4]

Zhenjiang first people's hospital is tertiary level hospital in Zhenjiang city of 4 million population in Jiangsu province of people's republic of china and it is affiliated hospital of Jiangsu university.

II. Methodology

The data of 2373 patients at Zhenjiang first peoples' hospital, admitted as head injury is analyzed in comparative manner study. The patients' ages were the most focused information and matter of comparison. Gender and per year admissions are also noticed in statistical approach. The whole number of patients' data is analyzed to insure more accurate results about the topic since a generalized conclusion is aimed to achieve at the end of the study. No sampling methodology is used. Simple and clear statistical methodology is used like data tabling, percentile, charting and mean measurement.

III. Results

Studying 2373 patients data admitted at Zhenjiang number one peoples' hospital in six year duration for traumatic brain injuries for analyzing age ranges which have high incidence rate then the others, we found the following:

Table 1 Yearly Admitted Patients

2011	2012	2013	2014	2015	2016	Total
360	373	393	385	426	436	2373
15.17%	15.71%	16.56%	16.24%	17.95%	18.37%	100

A mean of 396 patients are admitted at hospital for each year because of trauma to head.

Table 2 Gender Difference Of Six Years Admitted Patients

Male	1598	67.3%
Female	775	32.7%
Total	2373	100%

Male gender is more incidence than female to this health problem.

67.3% of the 2373 patients that the study covered are male where 32.7% are female gender.

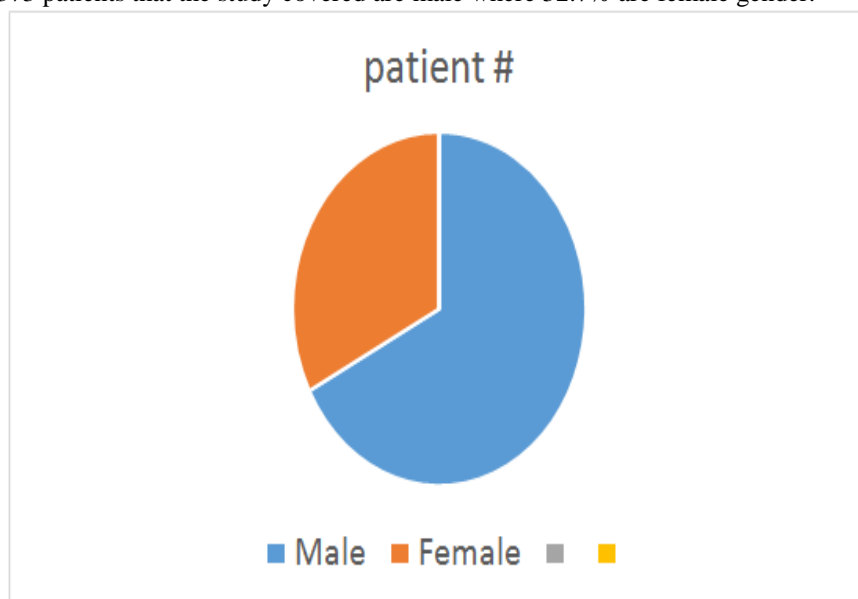


Figure 1 pie chart of gender difference

Table 3 Ages Of Admitted Patients On Five Years Range

Age Range	Number of Patients	Percentage
0 - 5	48	2%
6 - 10	23	1%
11 - 15	23	1%
16 - 20	59	2.5%
21 - 25	72	3%
26 - 30	106	4.5%
31 - 35	83	3.5%
36 - 40	95	4%
41 - 45	190	8%
46 - 50	237	10%
51 - 55	308	13%
56 - 60	261	11%
61 - 65	332	14%
66 - 70	237	10%
71 - 75	119	5%
76 - 80	48	2%
81 - 85	72	3%
86 - 90	48	2%
91 - <	12	0.5%
Total	2373	100%

The common age range that lie 66% of patients is from age 41 years old patients to 70 years old patients. While ages younger than 40 years represented only 21.5% of the patients. As 71 years old and older are only 12.5% of traumatic brain injuries admitted at hospital in last six years.

table 4: ages of admitted patients on ten years range

Age Range	Number of Patients	Percentage
0 - 10	71	3%
11 - 20	82	3.5%
21 - 30	178	7.5%
31 - 40	178	7.5%
41 - 50	427	18%
51 - 60	569	24%
61 - 70	569	24%
71 - 80	167	7%
81 - 90	120	5%
91 - <	12	0.5%
Total	2373	100%

On ten years age ranges, ages of 51 to 60 years old and 61 to 70 years old are the top leading ranges as 24% of patients lie by each. Age range of 41 to 50 years old is the second large group of 18% out of the total patients. 0 to 10 years old age range represent only 3% out of 2373 patients. While ages older than 91 years old is the least of 0.5%.

IV. Discussion

In this study, 2373 patients of head injury ages were been analyzed and it is found out that 66% of patient are age range of 41 to 70 years old which gives us that the common age range of incidence to head injury in Zhenjiang area is this. Which is totally different or contradict with other areas studies like United States of America which age ranges of 0 to 19 years old and 65 years old and above are the common age ranges. Where 71 years old patients and older are only 12.5% in Zhenjiang area. What ever the cause is, age ranges of most incidence to head injuries are different from area to another. In detailed analysis age range of 55 to 65 years old is the most common age range of incidence in Zhenjiang area as 51 to 70 years old ages are 48% of the total patients of 2373 person.

Gender incidence is more clearly common like other areas to male as 67.3% of the patients are male gender while females represent only 32.7% of the 2373 patients. The yearly mean of the patient admission in Zhenjiang first peoples' hospital is 395patient/year as there is an increase of the number from 360 patients in 2011 to 436 patients in 2016 with straight year by year increase.

V. Conclusion

Common age range of head injury incidence is different from area to another. Most common age range of head injury incidence in Zhenjiang area is from 55 years old to 65 years old. Specific area related studies is recommended to define the highest common age range of incidence for head injury. Male are more incidental to

head injury than female in Zhenjiang like other world areas. While children and old ages have same incidence rate with other world areas.

References

- [1]. McCaffrey RJ (1997). "Special Issues in the Evaluation of Mild Traumatic Brain Injury". *The Practice of Forensic Neuropsychology: Meeting Challenges in the Courtroom*. New York: Plenum Press. pp. 71–75.
- [2]. Daisley, Audrey; Kischka, Udo; Tams, Rachel (2008). *Head Injury*. Oxford: OUP Oxford.
- [3]. Indian network for health : http://www.medindia.net/patients/patientinfo/headinjury_causes.htm
- [4]. Remedy health media : <http://www.healthcommunities.com/traumatic-brain-injury/risk-factors.shtml>
- [5]. Archive of head injured patients (2011). Zhenjiang First Peoples' Hospital.
- [6]. Archive of head injured patients (2012). Zhenjiang First Peoples' Hospital.
- [7]. Archive of head injured patients (2013). Zhenjiang First Peoples' Hospital.
- [8]. Archive of head injured patients (2014). Zhenjiang First Peoples' Hospital.
- [9]. Archive of head injured patients (2015). Zhenjiang First Peoples' Hospital.
- [10]. Archive of head injured patients (2016). Zhenjiang First Peoples' Hospital.

*Dr Abdulhamid Mohamed. "The Common Age Range of the Highest Incidence Rate of Traumatic Brain Injury As Risk Factor is Different Between Areas." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)* 16.9 (2017): 60-63