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Characteristics of Patients with Pelvis injury in General Hospital of Haji Adam Malik Medan

Irfan Ritonga*[1], Chairiandi Siregar[2]

[1]Resident of Orthopaedic & Traumatology, Faculty of Medicine University of Sumatera Utara/ Haji Adam Malik General Hospital-Medan, Indonesia
[2]Consultant of Orthopaedic and Traumatology, Musculoskeletal Oncology Division, Faculty of Medicine University of Sumatera Utara/ Haji Adam Malik General Hospital-Medan, Indonesia

Abstract : Objective- Fractures and injuries to the pelvic ringmay be associated with severe trauma and other associated injuries. This study aims to determine the characteristics of patients with pelvic injury in Adam Malik Haji General Hospital Medan. **Material and Method-**The type of research conducted is a retrospective descriptive research method. This study was conducted in Medan Haji Adam Malik Hospital based on medical records of traumatic pelvic injury patients during the period of January 2016 - December 2017. The data used is secondary data taken from the records in the patient's medical record. The collected medical and demographic data is tabulated and presented in the form of a frequency distribution diagram or table and analyzed descriptively using total sampling. **Results-** During the period of research found from the medical record data of Medan Haji Adam Malik Hospital, there were 59 subjects with women as many as 18 subjects (30.5%) and 41 people (69.5%). . From the data collected, it was found that patients with a kindergarten background of 2 (16.9%), SD as many as 10 (16.9%) people, SMP as many as 8 (13.6%) people, high school as many as 25 (42, 4%) people, 10 (16.9%) people, and 4 (6.8%) people who don't go to school. Patients with tile type A1 total 12 patients (20.3%), tile type A2 as many as 18 people (30.5%), tile type B1 as many as 10 (16.9%), type tile B2 as many as 9 people (15.3 %), C1 tile type as many as 6 people (10.2%), C2 tile type as much as 1 (1.7%), and C3 tile type as much as 1 (1.7%). Patients with APC 1 compression type as many as 7 (11.9%) people, APC 2 as many as 13 (22%) people, APC 3 as many as 3 (5.1%) people, LC1 as many as 21 (35.6%) people, LC2 11 (18.6%) people, LC3 as many as 1 (1.7%) people, undefined as many as 2 (3.4%) people, and VS as many as 1 (1.7%) people. **Conclusion-** Patients who experience pelvic injuries are mostly male with an age range of 4-80 years. In terms of level of education, most patients are at the level of high school education. The most common mechanism of injury in pelvic injuries is lateral compression. The most common for tile classification is A2. Other most frequent injuries are lower limb fractures and the most common treatment for pelvic injuries are conservatives treatment.

Keywords : Pelvic fracture, trauma, characteristics, injury.

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Introduction

Fractures and injuries to the pelvic ring, which may be associated with severe trauma, are generally rare injuries (3 - 8%). Fractures that occur in ordinary young individuals are caused by high-energy trauma such as traffic accidents or falling from heights. In the early decades (1987 - 1999) in Brazil, the incidence was higher in men (62.5%). But in the second decade (2000 - 2010), the increase in incidence was seen in women (43.3%) even though it was not significant (Freitas, 2013). In elderly individuals, this fracture is usually caused by low-energy trauma, due to bone porosity (Pereira, 2017). In several studies, the trend of pelvic fractures in the elderly population increased, by 39.7% in women and 30% in men (Andrich, 2015). Incidence rates increase with age; the highest increase seen in the population aged over 85 years (Breuil, 2016).

Pelvic fractures still cause death and residual disability in blunt trauma individuals. Traffic accidents are a major cause of pelvic fracture, which is around 44-64% (Inaba, 2004). In several studies, 7 - 33% of cases of death at the accident site were caused by retroperitoneal bleeding due to pelvic fracture. The energy needed to disrupt the pelvic ring can be achieved from an accident, especially a collision from the lateral side of the individual. Frontal collisions with a minimum speed of 50 km / h or side collisions with a minimum speed of 40 km / h are needed to damage the integrity of the pelvic ring (Filho, 2011).

In a study conducted by Yang et al (2014), the incidence of pelvic fractures in Taiwan ranged from 17.17 to 19.42 per 100,000 during the period 2000 - 2011. The incidence in women was higher than men, and the incidence in older people (age> 65 year) is also high. 62% of cases of pelvic fractures due to traffic accidents and 10% of cases due to falls. However, mortality in male patients (2.1%) was higher than for women (1.6%). Of the 20 categories of combined injuries with pelvic fractures, the most common injuries were lower limb fractures (21.5%), spinal fractures (20.97%), and upper limb fractures (18.18%). In other parts of the body, injuries are common in the skull or intracranial bones (17.59%), internal abdominal and pelvic injuries (11%), and internal chest injuries (7.2%).

Research on the characteristics of pelvic injury sufferers in Adam Malik Haji Hospital has never been done before, with the varying prevalence and character of pelvic injury sufferers in the present age making researchers interested in knowing how the characteristics most commonly found in pelvic injury sufferers.

Method

This type of research is a retrospective descriptive research method which is intended to describe patients with traumatic pelvic injuries based on facts that have occurred and recorded in medical records in hospitalized patients in RSUP. Haji Adam Malik Medan. This research was conducted at Haji Adam Malik Hospital in Medan based on medical records of traumatic pelvic injury patients during the period of January 2016 - December 2017. The study was conducted after the ethics committee approved.

The inclusion criteria in this study were medical record data of patients treated with a diagnosis of traumatic pelvic injury, in RSUP. Haji Adam Malik Medan period January 2016 - December 2017. Exclusion criteria in this research are medical record data of patients with incomplete traumatic pelivis injuries

The data used are secondary data taken from the records in the patient's medical record in RSUP. Haji Adam Malik Medan period January 2016 - December 2017. Medical data and demographics collected are tabulated and presented in the form of diagrams or frequency distribution tables and analyzed descriptively. The data analysis used in this study is to use total sampling presented narratively in the form of tables or diagrams.

All statistical calculations are carried out using a computer-based statistical program. This study was approved by the Hospital Health Research Ethics Committee of the Faculty of Medicine, University of North Sumatra / Haji Adam Malik.

Results

The collection and selection of samples was carried out in the hospital namely Haji Adam Malik Hospital. Research began in January 2016 until December 2017. The hospital is a type A hospital. 59 subjects

were studied until the final analysis. the distribution of the number of subjects with pelvic injuries was 59 subjects with women as many as 18 (30.5%) and men as many as 41 people (69.5%).

Table 1. Distribution of Gender Demographic Characteristics of Subjects with Pelvic Injuries by sex

Variable	Total
Female, n(%)	18 (30,5%)
Male, n(%)	41 (69,5%)

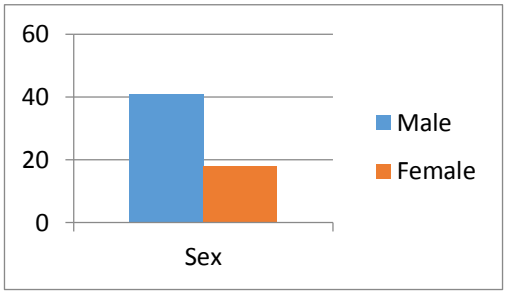

Figure 1. Distribution of Characteristics of Patients with Pelvic Injuries

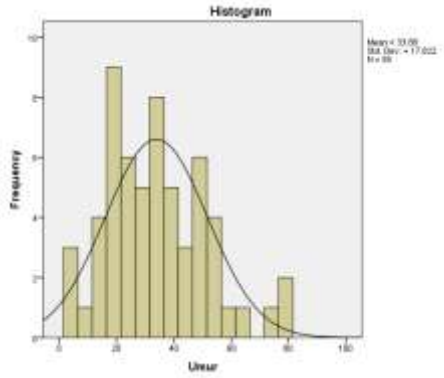

Figure 2. Distribution of Demographic Characteristics of Ages of Subjects Experiencing Pelvic Injuries

From the collected data it was found that patients with a kindergarten background of 2 (16.9%) people where 1 person was male and 1 person was female, elementary school (elementary school) as many as 10 (16, 9%) people, of which 9 are male and 1 is female, junior high school (junior high school) is 8 (13.6%) people, of which 4 are male and 4 are female, high school (school Upper Middle School) 25 (42.4%) people, of which 18 are male and 7 are female, S1 (bachelor) are 10 (16.9%) people, of which 8 are male and 2 are female, people are no school is 4 (6.8%) people, of which 1 is male and 3 are female.

Table 2. Distribution of characteristics of education last subject who suffered a pelvic injury

Variable	Total
No education	4
Kinderganten	2
Elementary school	10
Junior high school	8
Senior high school	25
University	10
Total	59

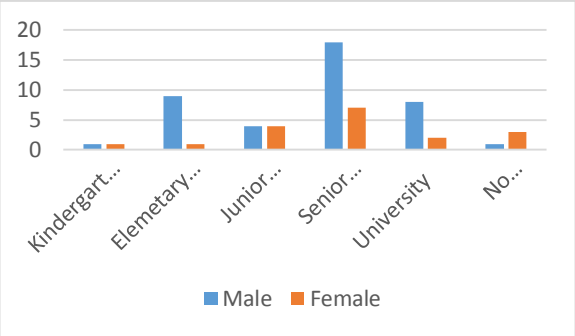

Figure 3. Distribution of characteristics of patients who experience pelvic injuries

Based on the mechanism of injury, the MVA mechanism was obtained by 54 patients (91.5%), and fell as many as 5 patients (8.5%). From the data collected, it was found that patients with tile type A1 totaled 12 patients (20.3%), tile type A2 as many as 18 people (30.5%), type B1 tiles as much as 10 (16.9%), type B2 tiles as much as 9 people (15.3%), C1 tile type as many as 6 people (10.2%), C2 tile type 1 (1.7%), C3 tile type 1 (1.7%) and undefined.

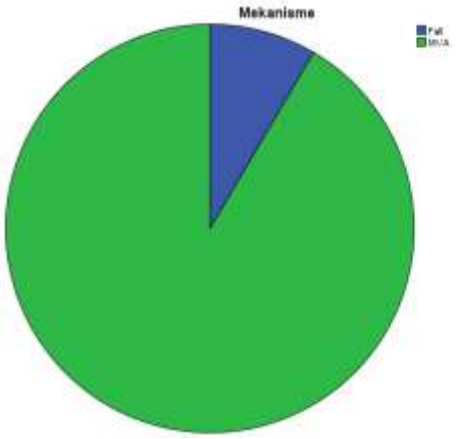

Figure 4. Bar diagram of demographic characteristics based on the mechanism of injury

Table 4. Distribution of Characteristics of Subjects Based on Tile Classification

Variable	Total
Tile type A1, n(%)	12 (20,3%)
Tile type A2, n(%)	18 (30,5%)
Tile type B1, n(%)	10 (16,9%)
Tile type B2, n(%)	9 (15,3%)
Tile type C1, n(%)	6 (10,2%)
Tile type C2, n(%)	1 (1,7%)
Tile type C3, n(%)	1 (1,7%)
Undefined	2 (3,4%)

From the collected data it was found that patients with APC 1 compression type as many as 7 (11.9%) people where 6 people were male and 1 person was female, APC 2 as many as 13 (22%) people, of which 7 people were male men and 6 people are women, APC 3 are 3 (5.1%) people, of which 2 are male and 1 is female, LC1 is 21 (35.6%) people, of which 13 are male and 8 women, LC2 as many as 11 (18.6%) people, of which 11 men and no women, LC3 as many as 1 (1.7%) people, of which 1 male, undefined as many as 2 (3.4 %) people, where 1 male and 1 female, and VS as many as 1 (1.7%) people, where 1 male, undefined as many as 2 (3.4%) people, of which 1 woman.

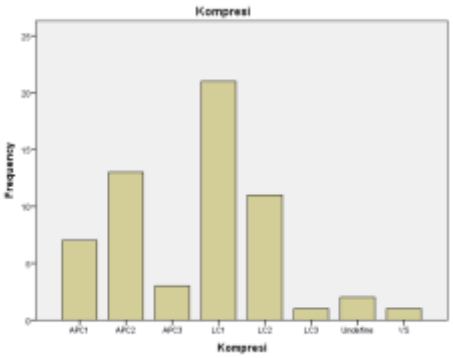

Figure 6. Distribution of the number of samples based based on the edge of compression

From the collected data, it was found that patients with abdominal injuries were 3 (5.1%) people where 1 person was male and 2 people were female, in the chest as many as 3 (5.1%) people, of which 1 person was male male and 2 people are female, 19 (32.2%) lower limb injuries, of which 11 are male and 8 are female, upper extremity is 6 (10.2%) people, of which 13 male and 8 female, urethral injury as many as 7 (11.9%) people, of which 10 are male and 1 female.

From the collected data, it was found that the patients who carried out debridement were 2 (3.4%) people where 2 people were male and there were no women, conservative actions in 44 (74.6%) people, of which 29 were male men and 15 people were women, ORIF actions were 13 (22%) people, of which 10 were male and 3 were female.

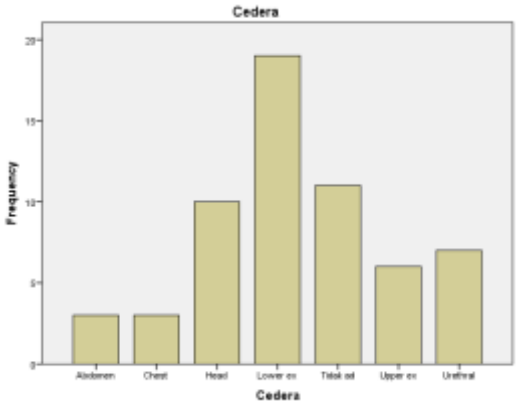

Figure 7. Distribution of the number of samples based on other injuries.

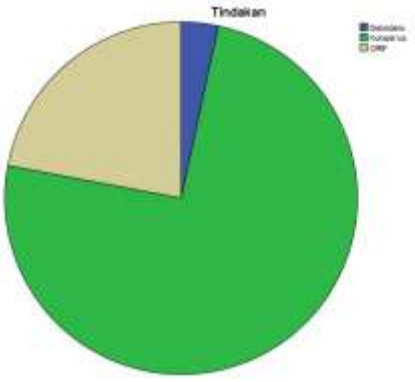

Figure 8. Distribution of number of samples based on actions.

Discussion

This study aims to determine the characteristics of pelvic injury patients at Adam Malik Haji Hospital in Medan. In the discussion section, discussions will be conducted based on patient characteristics, namely patient age, gender, patient education level, injury mechanism, tile classification, characteristics of compression type, characteristics of other injuries besides pelvic injury and characteristics of the type of action.

This study was conducted with a retrospective descriptive study method with a crossectional approach, which aims to determine the characteristics of pelvic injury patients who seek treatment at RSUP HAM.

The categorization of patients categorically is based on the youngest and oldest sex and age of patients in table 1 and table 2 and figure 1. According to Zhao, patients who are treated in an Emergency Installation with a background due to a traffic accident are 58% with an age range of 18 to 44. Traffic accidents are still a contributor to mortality, which affects the behavior of road users, vehicle type factors, and traffic conditions or conditions. From the results of the study it was found that the distribution of samples based on sex was not divided equally which was dominated by male sex as much as 69.5%, while the highest number was in the age range of 20 to 40 years. Based on the level of education found the distribution of patients who experience pelvic injuries at most with a history of high school education levels as much as 42.4%. This is in accordance with data obtained from the Indonesian central statistical bureau in March 2017, where the percentage of population aged 15 years and over according to the highest education level was completed in 2017 as much as 25.1%. Looking at the mechanism of injury, in this study it was found that most of it was caused by high energy trauma, which was caused by traffic accidents (Motor Vehicle Accidents), which was 91.5%. This is also in accordance with Toth et al .'s statement that the mechanism of trauma that often occurs is MVA. Research carried out by Bachry Lubis also explained that the most frequent cause is high energy trauma in traffic accidents. Based on data obtained from the statistics center bureau, the number of accidents is still quite high at 98.4 thousand accidents.

Based on the classification of pelvic injuries according to tile, it was found that the majority of patients experienced tile A2 (30.5%), which was still quite good stability in patients. This is also supported by research conducted by Dr. Ashok, namely 62.7% of patients who suffered pelvic injuries included A2 A2 tile classification, which was 62.7%. Based on classifications according to the type of compression, it was found that the majority of patients had pelvic injuries according to the young and burgess type LC1 which was 35.6%. This is also similar to the research conducted by Dr. Ashok is 63.1% having a pelvic LC1 injury of 63.1%. Based on the data of other injuries suffered by patients, in this study the data found that the most common were disorders of the lower extremities of 32.2% and most of them were femoral fractures. This is different from the research conducted by Dr. Ashok that the most common case of pelvic injury is genitourinary injury. Of the types of actions performed in cases of pelvic injuries, the most common is conservative 44%. The most preferred choice of action is to install a pelvic sling. This is also according to that reported by Mohamad J et al., That the majority of pelvic injuries are lateral compression types and are generally stable so that most are treated non-operatively.

Conclusion

From the results of the study conducted, it was found that patients who suffered most pelvic injuries were men with an age range of 4-80 years, if in terms of education level most patients were at the level of high school education. The most common mechanism of injury in pelvic injuries is lateral compression. The most numerous tile classification is A2. Other most frequent injuries are lower limb fractures and the most common actions for pelvic injuries are conservatives. The results of the study are in accordance with existing research, because for the case of stable pelvic fracture patients, the results obtained for the long term are quite good with only conservative measures.

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