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Original Research

Assessment of traumatic injuries in children- A forensic study

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ABSTRACT

Background: Children have a different physiological response to major trauma compared to adults. The present study was conducted to assess traumatic injuries in children. **Materials & Methods:** The present study was conducted in the department of Forensic Medicine. It comprised of 130 children of both genders. Data such as name, age, gender etc. was recorded. In all cases, type of injury was recorded. **Results:** <2 years had 20 patients, 2-5 years had 40, 5-10 years had 45 and 11-15 years had 25 patients. Major cause of injury was RTA in 35 cases, poisoning in 25, fall from height in 20, burn in 16, physical assault and sports injury 12 each and sexual assault in 10 cases. The difference was significant ($P < 0.05$). Out of 80 male patients, 14 died and out of 50 females, 10 died. **Conclusion:** Authors found that major cause of injury was RTA poisoning, fall from height, burn, physical assault and sports injury.

Key words: Children, Injury, Physical assault

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INTRODUCTION

Reducing the preventable child deaths was one of the most important health-related indicators among all millennium development goals. It is also one of the core indicators in the recently enshrined sustainable development goals. Since the beginning of this millennium, there has been a substantial reduction in child mortality and morbidity due to infectious diseases. As the morbidity and mortality due to pre-, intra- and postnatal related causes is decreasing, the world has started focusing on other preventable causes of morbidity and mortality among children. A few developed countries have started giving more emphasis on preventing child morbidity due to non-convectional causes such as road traffic accident, domestic violence, parental abuse, recreation-related injuries etc.

Children have a different physiological response to major trauma compared to adults, in that they maintain a near-normal blood pressure even in the face of 25% to 30% of blood volume loss. In these situations, subtle changes in the heart rate and extremity perfusion may signal impending cardiorespiratory failure, and should not be overlooked. Accidents and other forms of harms are not only responsible for the deaths among children but are also a major reason for lifelong disability. According to an estimate near about 4-5 million children die from trauma-related injuries each year. The present study was conducted to assess traumatic injuries in children.

MATERIALS & METHODS

The present study was conducted in the department of Forensic Medicine. It comprised of 130 children of both

genders. Ethical approval was obtained prior to the study.

Data such as name, age, gender etc. was recorded. In all cases, type of injury was recorded. Results thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Age group (Years)	Number	P value
<2	20	0.05
2-5	40	
6-10	45	
11-15	25	

Table I shows that <2 years had 20 patients, 2-5 years had 40, 5-10 years had 45 and 11-15 years had 25 patients. The difference was significant (P < 0.05).

Table II Cause of injury

Cause	Number	P value
Burn	16	0.05
Fall from height	20	
RTA	35	
Physical assault	12	
Sexual assault	10	
Poisoning	25	
Sports injury	12	

Table II, graph I shows that major cause of injury was RTA in 35 cases, poisoning in 25, fall from height in 20, burn in 16, physical assault and sports injury 12 each and sexual assault in 10 cases. The difference was significant (P < 0.05).

Graph I Cause of injury

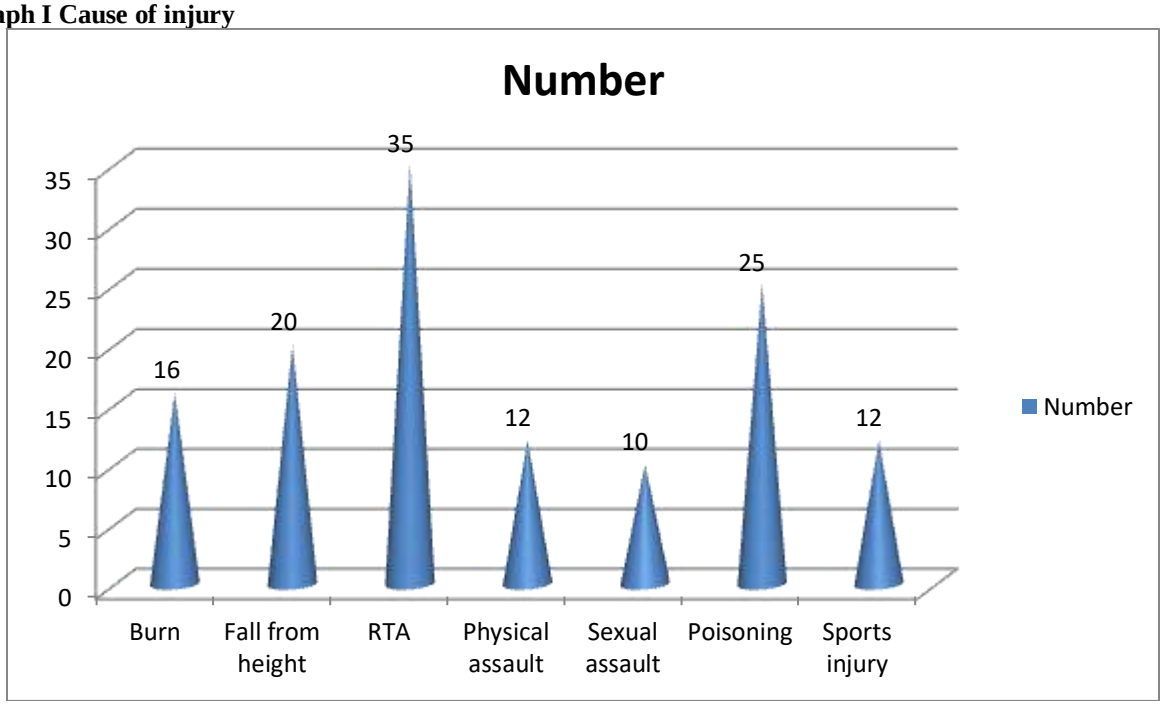

Table III Number of deaths

Gender	Male	Female
Total	80	50
Deaths	14	10

Table III shows that out of 80 male patients, 14 died and out of 50 females, 10 died.

DISCUSSION

Injury is the leading cause of death and disability in children. Each year, almost one in six children in the United States require emergency department (ED) care for the treatment of injuries, and more than 10,000 children die from injuries.[5] Severely injured children need to be transported to a facility that is staffed 24/7 by personnel experienced in the management of children, and that has all the appropriate equipment to diagnose and manage injuries in children. Anatomical, physiological, and emotional differences between adults and children mean that children are not just scaled-down adults.[6] Children have less fat, more elastic connective tissue, and a pliable skeleton protecting tightly packed abdominal and thoracic structures. The force of an impact is transmitted widely through a child's body, resulting in multisystem injuries in almost 50% of children with serious trauma. Their larger body surface area to body mass ratio predisposes them to larger heat and insensible

fluid loss than adults, resulting in higher fluid and caloric requirements.[7] Non-convectional causes of morbidities are swiftly becoming a significant cause of childhood mortality and disability. Trauma resulting from an array of agents among the pediatric population is on the rise and is also becoming important social problems. In comparison to infectious diseases recovery from physical injuries may be more painful, long and costlier. Additionally, many children who survive are at risk of developing a permanent disability, requiring lifelong care and have a significant impact on their psychosocial health and financial independence.[8] The present study was conducted to assess traumatic injuries in children. In this study, <2 years had 20 patients, 2-5 years had 40, 5-10 years had 45 and 11-15 years had 25 patients. Ahmad et al[9] in their study a total of 2,533 children under fifteen years of age were included. Of the total children, medico-legal reports were filed for 368 (14.5%) study participants and 82 (3.23%) children died because of their injuries. Road traffic accidents (RTA) were the most common cause of physical injury closely followed by fall from height and recreational activities. We found that major cause of injury was RTA in 35 cases, poisoning in 25, fall from height in 20, burn in 16, physical assault and sports injury 12 each and sexual assault in 10 cases. Out of 80 male patients, 14 died and out of 50 females, 10 died. Sharma et al[10] noted that 52.61% of their study participants had sustained injury secondary to RTA followed by falls related injuries (36.32%). RTA was much more common among boys in comparison to than girls. Among those sustaining injuries from RTA, a higher proportion of children were occupants of any kind of vehicle.

CONCLUSION

Authors found that major cause of injury was RTA poisoning, fall from height, burn, physical assault and sports injury.

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