

# Pattern of Paediatric Trauma Seen in a Teaching Hospital<sup>§</sup>

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## ABSTRACT

During the ten year period between 1982–92, 882 children below the age of 14 years old were admitted to the paediatric surgical wards at King Fahd University Hospital at Al-Khobar. Of these there were 301 children admitted with fractures and dislocation, 205 boys and 96 girls a ratio of 2.1:1. The ages ranged from one day to 14 years old, the average age being 5.97 years old. The children sustained 318 fractures and one dislocation. The cause of injury in 195 (64.8%) cases was falling outside the home, 78 (26%) were the result of car accidents and 28 (9.2%) children were injured at home. Forty-four (14.6%) had associated injuries and in this group more than 50% had head injuries. There were 170 upper limb and 138 lower limb injuries. There were no deaths.

Our analysis indicate that simple falls and blunt trauma were the major causes of hospital admission, and that injuries due to road traffic accidents are on the rise. We conclude that health and safety education should be made part of the school curriculum and parents should be taught through the media how to protect their children from motor vehicle accidents. Even in the absence of specialised trauma centres, standard care should be provided to patients with routine trauma.

Trauma remains the leading cause of death and disability in developed countries<sup>1-3</sup>. In the United States,

9,602 children die yearly from road accidents, compared to 9,977 from all other causes combined<sup>4</sup>. One report estimates that each year over 70,000 children are admitted due to trauma related injuries<sup>5</sup>. Road traffic accidents (RTA) are also a major cause of death in children over the age of one year<sup>6</sup>. In 55% of paediatric trauma cases the mechanism of injury was RTA<sup>7</sup>.

RTA are second most common cause of hospitalisation in Saudi Arabia<sup>8</sup> and there are no figures related to paediatric trauma from this region of the world. The aim of this study is to assess retrospectively the pattern and the prevalence of paediatric trauma among children admitted to King Fahad University Hospital, a teaching hospital with primary and tertiary care referral centre in Eastern region of the Kingdom.

## METHODS

King Fahd University Hospital is a referral centre for the Eastern region of Saudi Arabia and also admits trauma cases arriving directly for the emergency room. A computerised search of medical records was done for ICD 9 CM<sup>9</sup> to identify all admissions between 1982 and 1992. The data was cross-checked with the admission and discharge registers from the wards. The data was then analysed and computed for age, sex, mechanism of injury (RTA/falls/home), anatomic regions injured and associated injuries. The injuries were grouped into skull and cranium, chest, abdomen, lower limb and upper limb fractures.

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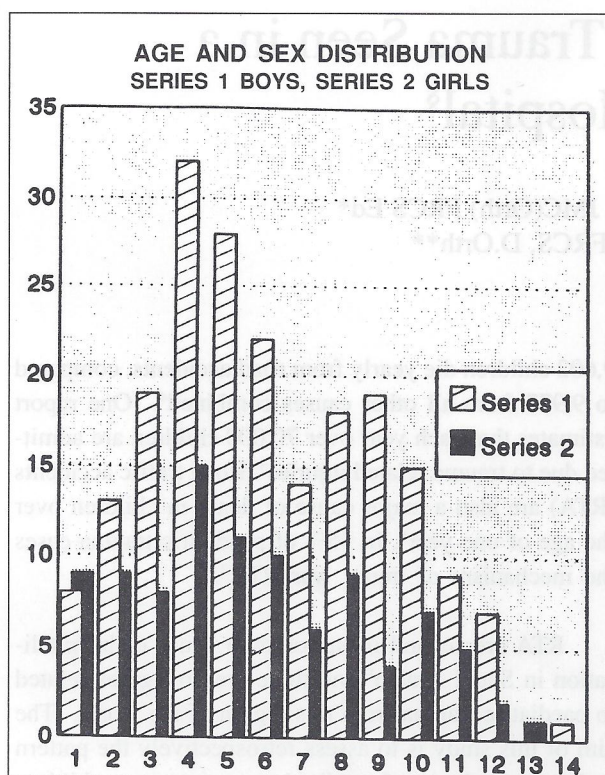


Figure 1: Age and Sex distribution of boys and girls

## RESULTS

During the study period, out of 882 orthopaedic patients admitted to the hospital, 301 (34%) sustained trauma and these patients formed the basis of this retrospective analysis. They suffered 318 fractures and one dislocation. Two hundred and five were males and 96 were females, a ratio of 2.14:1 (Fig 1). The demographic data of all patients is given in Table 1.

Table 1  
Demographic Data of Paediatric Trauma Patients  
(1982–1992)

Number of patients admitted <14 years	882
Number of patients with fractures and dislocations	301
Number of fractures and dislocations	318
Boys	205
Girls	96
Age <5 years	152
6 – 10 years	124
11 – 14 years	25

Table 2  
Anatomic Regions injured

Upper limb	170
Humerus	61
Radius & Ulna	91
Hand	19
Lower Limb	138
Femur	83
Tibia & Fibula	43
Feet	12
Pelvis	8
Spine	3

In 195 (64.8%) the cause of injury was accidental falls outside the home and RTA were responsible in 78 (26%) of the cases. Table 2 shows the anatomic regions injured.

There were 170 (53.7%) upper limb fractures, the majority being of the radius and ulna (28.6%). There were also 138 (43.4%) lower limb fractures with the femur being the most common (26%). The associated injuries sustained were as follows, 23 cranial and skull, 2 chest, 2 abdomen and 17 other sites.

## DISCUSSION

Despite abundant data confirming that accidental injury is the major cause of death in children<sup>1,3,4,10</sup>, there have been very few reports from the Gulf region on the pattern of paediatric trauma, with no recommendations available on how to reduce such injuries. Our analysis indicates that RTA were responsible for fractures in 26% of the patients as compared to 85% as reported by Colombani et al<sup>7</sup>. It was surprising to note that the figure from the Riyadh area was only 7%<sup>11</sup>. Fracture of the femur is usually a reflection of the severity of injury with 26% of our patients had this type of injury as compared to 5.6% in the Riyadh area<sup>11</sup>.

Our male:female ratio of 2.3:1 was similar to an earlier report from Saudi Arabia<sup>11</sup> and the rest of the world<sup>12-15</sup>. The majority of injuries occurred outside home during leisure time eg. on the playground, cycling etc, but the incidence was still much lower than in the Riyadh study. There appears to be a need to find more

ways of preventing injuries on our playgrounds; measures such as increased parental supervision and making school children more aware of the dangers involved are clearly needed.

The economic impact of RTA is increasing. The estimated cost for the treatment of RTA victims in 1980 in Saudi Arabia was US \$1,085,644 per day<sup>15</sup>. The rehabilitation of patients with RTA was more prolonged than patients from non-RTA.

## CONCLUSION

**Emphasis on health and safety education at school level should be made mandatory. As we cannot expect children to understand and grasp environmental dangers it is important that parents do, and so protect their children. The media should also be involved, teaching parents how to prevent injuries in general, especially those caused by RTA.**

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