ORIGINAL ARTICLE

Home Related Accidents During Infancy

Ravinder K. Gupta*, Ritu Gupta**

Abstract

A profile of two hundred infants who had met with an accident at home was studied. The most common type of accident observed was fall (53%). The fall was either from walker, furniture/bed, stairs, roof and from attendant's lap. Injuries due to sharp edge instruments (23%) aspiration of parts of toys, marbles, coins (11%), burns / scalds (9%) etc. were other type of accidents encountered. Most of the accidents occurred between 9 AM to 9 PM.

Key Words

Accidents, fall, walker.

Introduction

Accidents are a major cause of morbidity and mortality in children. An accident can be defined as an unexpected, unplanned occurrence of an event which usually produce unintended injury, death or property damage (1). Injuries cause almost 40% deaths among 1-4 year old children and three times more deaths than the next leading cause, congenital anomalies (2). Accidents represent a major epidemic of non-communicable disease throughout the world. With industrialization, advancement in technology, better health care and preventive measures like immunization, accidents are becoming important cause of death in children world over. With better education and opportunities for work for both parents, number of members of family working are increasing day by day. Accidental death in children particularly during playing, while flying kites, fall from the terrace, injury from sharp objects, injury from fire crackers particularly during the festive seasons, improper use of electrically operated toys, sharp toys, scissors, knives, blades are not uncommon (1-5). Most of the studies regarding accident in children are conducted in older age groups. We conducted a study regarding various accidents during infancy giving more stress on home related accidents.

Material and Methods

The study was conducted at a pediatric clinic from September 2002 to August 2003. Two hundred infants who had met with different types of accidents at home were considered for the study. These infants underwent detailed evalution regarding age, education status of parents and family type. Detailed information in respect of circumstances (time and place), activity of the child at the time of accident, nature and its immediate consequences were obtained.

Results

There was no significant sex predominance (M:F=110:90). There were about 24 infants who met with an accident. Sixty percent of infants belonged to nuclear families. Regarding educational status, 53% mothers had no education at all, while 25% were undergraduate and rest were graduates. 108 were working mothers. The age, sex wise distribution and nature of accident is depicted in Table 1 and 2. The most common type of accident observed was fall 106 (53%). The fall was either from walker, furniture/bed, stairs, roof and from attendant's tap. Toys, sharp edged instruments like knife,

From the *Adval Pediatric Clinic, Nai Basti, Jammu Cantt. & Department of **Physiology, Govt. Medical College, Jammu (J&K).
Correspondence to : Dr. Ravinder K. Gupta, 136-Nai Basti, Jammu Cantt.

scissors, and safety pins caused injuries in 46 (23%). Aspiration of loose parts of toys, marbles, coins, buttons, nuts, beds, pins, stones were another type of accident seen in 22 (11%). Burns / scalds and electric burns were seen in 18 (9%) while 8 (4%) had near drowning. Out of 9 who had history of a fall, 70% had sustained trauma on forehead as depicted in Table No.3, while 13% has evidence of fracture of bone at various sites. Most of the accidents occurred between 9 AM to 9 PM. Only 49 (24.5%) children had received first aid, often by the family, before reaching us.

Table 1: Sex-wise distribution and nature of accident

Fall (n=106)		**M**	**F**
Walker	42	23	19
Furniture/bed	34	17	17
Terrace/stairs	17	9	8
Attendant's lap	13	7	6
Puncturing Injury (n=46)			
Knife	16	9	7
Scissors	8	4	4
Sharp edged type	8	5	3
Safety pins	8	4	4
Others	6	4	2
Aspirations (n=22)			
Loose parts of toys	8	5	3
Marbles	6	4	2
Coins	6	3	3
Pins	2	1	1
Burns/scalds/electric burns (n=18)			
Fall of boiling water/dal/milk	10	6	4
Touched burning wood/coal	4	2	2
Touched live wire/socket	4	3	1
Near drowning (n=8)			
Immersed in bath tub	6	3	3
Fall in pit	2	1	1
		110	**90**

Table 2 : Age-wise distribution and nature of accident.

Age (Yrs.)	**Fall**	**Puncturing injury**	**Aspiration**	**Burns**	**Near drowning**
<1	14	4	--	6	--
1-4	9	3	--	3	--
4-8	31	17	9	4	3
8-12	52	22	13	5	5
Total	**106**	**46**	**22**	**18**	**8**

Table 3 : Part injured due to fall.

Forehead	-	64 (70%)
Scalp	-	28 (365)
Face	-	17 (18%)
Limbs	-	12 (13%)
Trunk	-	10 (11%)

Discussion

Accidents are a major cause of morbidity and mortality in children. Child deaths due to accident portrays a grave public health problem around the globe. Accident take an excessive toll of children in the form of death, disability and suffering. It is true that the accident risk per hour for a child is much greater than for an adult and depends on the developmental stages of the child and his surrounding environment (1).

The profile of home related accident among infants were studied. There was hardly any significant sex predominance (1-2:1) as reported in other studies (3, 4) Males predominated in many studies (5-9). Falls are common between the ages of 4-12 month, mainly because of the increasing ability of infants to roll, creep, stand and climb. Falls were the most common type of accident. The incidence varied from 44.4% to 71.1% in many studies though in varying age groups (3 , 4, 6, 8, 9). The fall was either from walker, furniture/bed, stairs, roof and from attendant's lap as reported by other workers (3, 4, 8, 10). Walkers are not known to promote early walking but have a faulty design and can easily trip over and lead to injury. Besides they give the child mobility at an age, when they cannot recognize danger and sustain falls (8, 10) Toys, sharp edged instruments like knife, scissors and safety pins, caused injuries in 23% children in study group. This fact is not observed in many studies. Injuries caused by sharp and blunt object were common in villages as reported by one of the studies (6). Toys, too can cause problem in form of aspiration of loose parts (8). About 11% of accidents were because of toys in our study. Burns, scalds featured as prevalent type of injuries in different studies (3, 5, 8). We observed 9% accidents because of burns and scalds. Burns because of burning wood, coal, fall of boiling water, milk, dal and electric burns because of touching live wires and electric sockets were seen in our study. Chemical burns in contact with corrosives was not seen in our study. Burns in infants are different from adults in that for a given body weight they have a large surface area. The skin is much thinner and injury is more severe. The water loss due to normal metabolism and burns is more in children, needing larger amount of fluid for resuscitation. Thermal regulation is

more difficult, the healing process takes longer, and there is a greater chance of scar hypertrophy (8).

Bath tub/bucket immersion accidents are also seen. The mean age in one of the studies are 11 months (11). In our study almost 4% children had near drowning. Six children immersed either in bath tub or bucket, while 2fell in pit.

The most common localization in form of injury due to accidents was see in upper extremities 41% in one of the studies (9). Head injuries contributed 84.3% as in one of the (studies (12). Head contributed a larger portion of the body than in older subjects. In our study about 70% studied sustained trauma due to fall on forehead, while face, limbs and trunk was involved.

Majority of accidents happened between 9 AM to 9 PM as reported in many studies (4,7).

The child's environment has also an important part to play in injury causation. Social stress factors like single parent, younger mother unemployment of parent, step families, poor education status and size of family contribute to injury causation (3,4,5,8,13,14).

In our study, we noticed short family size, poor education status and working mothers as major contributing factors in causation of accidents.

Inspite of awesome health, social and economical impact, accident prevention strategies have hardly received any attention in India. It is simple to understand that as the child develops increasing his abilities and skill the risk of mishaps also increases. Health Education is an important medium as far as prevention of accident is considered in children (1).

Accidents can be prevented to certain extent provided modifications are made in the home. Parent needs to be educated regarding the preventive measures to be adopted (8). Protection of staircase by non-collapsible gates, smooth flooring, avoidance of walkers, electrical outlets, properly secured with circuit breakers, keeping hot appliances / burnt materials away from reach of children are important (8).

Children should be discouraged from entering the kitchen during cooking hours. The toys appropriate to child's age, size, without sharp edges, rust proof, battery operated, unbreakable and without small holes in which fingers can be entrapped and which do not pinch fingers should be used. The spilled liquid/water from the floor should be wiped off as early as possible to avoid slip by the children. The infants should not be left alone on high bed, cribs with small rails, stroller, infant seat etc. Health education regarding first aid should be given.

References

1. Bodhankar U, Pakhmode Vivek. Accident prevention in children. Publication of IAP Parent education cell, 1998.
2. Rivara FP, Grossman D. Injury control. In Behrman RE, Kilegmann RM, Jenson HB (eds) Nelson Textbook of Pediatrics 16th eds. Philadelphia; WB Saunders company, 2000: 231.
3. Matanhire DN, N Sungu M, Mabhiza ET. Factors associated with incidence of domestic accidents in children aged 0-5 years in Chikomba District, Zimbabwe. *Cent Afr Med* 1994; 40 (5): 113-19.
4. Carter YH Jones PW. Accident among children under five years old: a general practice based study in North Staffordshire. *Br J Gen Pract* 1993; 43 (369): 159-63.
5. Tursz A Lelong N, Crost M. Home accidents to children under 2 years of age. *Pediatric Perinatal epidemiol* 1990; 4 (4): 408-21.
6. Tondon JN, Kalra A, Kalra K, Sahu SC, Nigam CB, Qureshi GH. Profile of accidents in children. *India Pediatr* 1993; 30 (6): 765-69.
7. Meiers S Baerg J. Farm accidents in children : eleven years of experience. *J Peditr surg* 2001; 36 (5): 726-29.
8. CG Wilson. Accidents in childhood. In: Parthasarathy A (ed) IAP Text Book of Pediatrics 2nd edn. New Delhi: Jaypee Brothers 2002: 791-92.
9. Lindblad BE, Terkelsen CJ. Product related home accidents in children. A survey of 1590 accidents. *Acta Pediatr Scand* 1991; 80 (II); 1087-91.
10. Chiavello C, Christoph R, Bond G: Infant walker related injuries. A prospective study of severity and incidence. *Pediatrics*1994; 93: 974.
11. Pearn J, Nixon J. Bath Tub immersion accident involving children. *Med J Aust* 1977; 1 (7): 211-13.
12. Sharma AK *et al*. Pattern of childhood trauma. *Indian perspective Indian Pediatr* 1993, 30: 57-60.
13. Reading R, Langford IH, Haynes R, Lovett A. Accident to Preschool children: comparing family and neighbourhood risk factors. *Soc Sci Med* 1999; 48 (3): 321-30.
14. Wadsworth J, Burnell I, Taylor B, Butter N. Family type and accidents in Preschool children. *J Epidemiol Community Health* 1983; 37 (2): 100-104.