

- Arslan G. Risk factors for postoperative respiratory complications in adult liver transplant recipients. *Transplant Proc.* 2004;36:218-20.
6. Huang CT, Lin HC, Chang SC, Lee WC. Pre-operative risk factors predict post-operative respiratory failure after liver transplantation. *PLoS One.* 2011;6:e22689.
 7. Feltracco P, Barbieri S, Galligioni H, Michieletto E, Carollo C, Ori C. Intensive care management of liver transplanted patients. *World J Hepatol.* 2011;3:61-71.
 8. Levesque E, Hoti E, Azoulay D, Honore I, Guignard B, Vibert E, *et al.* Pulmonary complications after elective liver transplantation-incidence, risk factors, and outcome. *Transplantation.* 2012;94:532-8.
 9. Bourdeaux C, Tri TT, Gras J, Sokal E, Otte JB, de Ville de Goyet J, *et al.* PELD score and posttransplant outcome in pediatric liver transplantation: A retrospective study of 100 recipients. *Transplantation.* 2005;79:1273-6.

Profile of Children Hospitalized with Acute Poisoning in New Delhi

195 cases of acute poisoning among children (age < 12 y) in a tertiary hospital were identified over a period of one year. Two-thirds (63%) of them were males and 75% were below five years of age. Poisoning by medicines was most common (17%) followed by ingestion of corrosives/detergents (16%) and kerosene (14%).

Keywords: Corrosive ingestion, Drug overdose, Toxicology.

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Acute poisoning in children is commonly accidental in nature, with preventable morbidity and mortality. In the year 2004, more than 45,000 deaths of people under 20 years of age occurred due to poisoning. South-East Asia documented 1.7 fatal child poisoning cases per 100,000 population [1]. Such cases constitute 1-2% of total pediatric admissions in our country [2,3].

We analyzed hospital database for one year – from February 2015 to January 2016 with an objective to study the profile of acute poisoning in children (age < 12 years) admitted in a tertiary hospital in New Delhi. Permission for conducting the study was taken from Institutional Ethical Committee. Telephonic consultation was sought from National Poisons Information Centre (NPIC), AIIMS whenever required.

During the study period, 195 children (123 boys) were hospitalized with a history of poisoning; 146 were below five years of age. Most common form of poisoning was due to ingestion of medicine ($n=34$, 17%). Thyroxine was the most common medicine (21%) consumed, followed by phenytoin ($n=7$, 15%) and benzodiazepines ($n=5$, 12%). Other agents of poisoning are listed given in **Table I**. About 79% ($n=154$) of the children with poisoning were discharged and 19% children ($n=37$) left the hospital without any intimation. Death occurred in

four (2%) cases ($n=4$) – mostly due to the ingestion of unknown substance. All the children who died were below five years of age.

The mortality rate in our set up was much lower than previous reports from India [4,5]. However, the rate of leaving the hospital without intimation was higher. This might be due to fear of legal repercussions in such cases. Higher proportion cases among younger age group, as seen in our study, has been reported earlier [2,4,6]. Young children—due to their curious nature, close position to the floor and tendency to put things in their mouths—are often victims of accidental poisoning [6]. Drugs and kerosene, similar to our observations, were the most common agents leading to hospital admission for pediatric poisoning in other studies [4,6]. American Academy of Pediatrics also identified medicines, cleaning agents and kerosene among common agents implicated in such accidents [7]. Storage of kerosene/petrol/ diesel in empty bottles of soft drinks within reach of children is often a cause of such poisoning.

TABLE I AGENTS IMPLICATED IN CHILDHOOD POISONING IN PRESENT STUDY ($N=195$)

| <i>Agents in childhood poisoning</i> | <i>Number (%)</i> |
|--------------------------------------|-------------------|
| Drugs | 34 (17) |
| Detergent/Corrosive/Surf/Soap water | 31 (16) |
| Kerosene | 27 (14) |
| House cleaner | 24 (12) |
| Pyrethroids/mosquito repellents | 19 (10) |
| Pesticides/Rat killer | 14 (7) |
| Unknown | 11 (6) |
| Others* | 35 (18) |

*Diesel ($n=7$), Thinner ($n=5$), Mercury ($n=3$), Camphor ($n=3$), Disinfectant (chloroxyleneol + terpeniol; $n=3$), organophosphorus ($n=2$), petrol ($n=2$), acetone ($n=2$), sulfas ($n=1$), turpentine ($n=1$), datura ($n=1$), fire cracker ($n=1$), soda ($n=1$), rock salt ($n=1$), household mosquito repellent cream ($n=1$), lizard in milk ($n=1$).

For preventing poisoning with medicines, previous studies emphasized on keeping them out of reach of the children [2,6]. WHO has earlier stressed on laws mandating child-proof packaging of medicines [1]. More importantly, there is gradual rise in the number of medications present in any household at any given point of time, making toddlers vulnerable [8]. Availability of thyroxine, which is a commonly used drug by adults, in a container probably makes it easier to consume than any other drugs packed in blister packaging or supplied with child-resistant packages.

We conclude that ingestion of medicine and household products remain important causes for acute poisoning in children. Careful storage of common household products implicated in pediatric poisoning and keeping medicines in child-proof containers or under lock and key may reduce such poisoning to a great extent.

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***MANAS PRATIM ROY, RATAN GUPTA,
MEENAKSHI BHATT AND
KAILASH CHANDER AGGARWAL**

*Department of Pediatrics,
VMMC and Safdarjung Hospital,
New Delhi, India.*

** manas_proy@yahoo.co.in*

REFERENCES

1. WHO, UNICEF. World Report on Child Injury Prevention. World Health Organization. Geneva. 2008. p. 123-42.
2. Bhat NK, Dhar M, Ahmad S, Chandar V. Profile of poisoning in children and adolescents at a north Indian tertiary care centre. *J Indian Acad Clin Med.* 2012;13:37-42.
3. Gangal R, Haroon A. Profile of acute poisoning in pediatric age in district Moradabd: A hospital based study. *J Indian Acad Forensic Med.* 2015;37:155-9.
4. Vasanthan M, James S, Shuba S, Abhinayaa J, Sivaprakasam E. Clinical profile and outcome of poisoning in children admitted to a tertiary referral center in South India. *Indian J Child Health.* 2015;2:187-91.
5. Randev S, Grover N, Sharma R, Sharma H. Acute poisoning in children: seven year experience at a tertiary care hospital of north India. *Curr Pediatr Res.* 2011;15:65-8.
6. Kohli U, Kuttiaat VS, Lodha R, Kabra SK. Profile of childhood poisoning patients at a tertiary care centre in north India. *Indian J Pediatr.* 2008;75:791-4.
7. American Academy of Pediatrics. Poison Prevention and Treatment Tips: National Poison Prevention Week. March 20-26, 2016. Available from: <https://www.aap.org/en-us/about-the-aap/aap-press-room/news-features-and-safety-tips/pages/poison-prevention-and-treatment-tips.aspx?nfstatus=401&nftoken=00000000-0000-0000-000-0-000000000000&nfstatusdescription=ERROR:+No+local+token>. Accessed August 16, 2016.
8. Budnitz DS, Lovegrove MC. The last mile: taking the final steps in preventing pediatric pharmaceutical poisonings. *J Pediatr.* 2012;160:190-2.