Correspondence

Epidemiology of acute poisoning

Rapid urbanization and technological development has led to the introduction of an ever-increasing list of newer chemical agents, designed for diverse use in the market. Use of chemicals in industry, agriculture and household goods has increased manifold. Misuse of pesticides and other agrochemicals and overuse and abuse of drugs has led to an increased incidence of, and morbidity and mortality due to, poisoning; an important health problem in many developed and developing countries. Mortality can be prevented and morbidity reduced with rapid diagnosis and early initiation of therapeutic interventions. Identification of high-risk population groups as well as the chemical substances, commercial products and natural toxins which cause poisoning may help in improving preventive and therapeutic programmes.

Assessment of the magnitude of the problem is important. In India, there are no epidemiological data on the actual incidence of poisoning because of a lack of systematic reporting to a central agency. There are few epidemiological studies on poisoning in India. Though there are Poison Control Centres in many developed nations in India the first National Poisons Information Centre (NPIC) was set up in 1995 in the Department of Pharmacology, All India Institute of Medical Sciences, New Delhi. The Centre provides round-the-clock service on management of poisoning cases to healthcare professionals. A retrospective analysis of the records from the NPIC from April 1999 to March 2000 showed that a total of 823 cases were reported with queries on both management (95.5%) and information on various agents and the functioning of the centre (4.4%). These cases were in the age range of 1–70 years, with the highest incidence in the age range of 14–40 years. Men (56.1%) outnumbered women (43.8%). Intentional poisoning was common (52.9%) followed by accidental (42.4%). The route of exposure in the majority was oral (86%) followed by dermal and inhalational. The agents implicated were household products (46.1%), drugs (15.9%), agricultural pesticides (10.5%), industrial chemicals (8.5%), animal bites and stings (5.5%), plants (2.4%), unknown substances (4.6%) and miscellaneous items (6.1%). Household products consisted mainly of pesticides (rodenticides, pyrethroids, organophosphates, carbamates). Other common household agents consumed were naphthalene balls, thermometer mercury, kerosene, phenyl, detergents and corrosives, paint thinners and antiseptics. The use of various insect repellants, aerosols and mats containing different pyrethroids is increasing and these constitute the second-largest group among the household pesticides. The pattern of poisoning shows a different trend when compared to earlier retrospective hospital-based Indian studies which showed that barbiturates, copper sulphate, organophosphates and aluminium phosphide were the common agents. Poisoning due to pyrethroids was almost non-existent a few years ago. The introduction of these agents in the market, which are comparatively less toxic, could be one of the reasons for the fewer number of calls due to organophosphates. Poisoning due to drugs is increasing and benzodiazepines are frequently ingested, which is similar to reports from the West. Poisoning due to drugs used in different alternative systems of medicine, e.g. Ayurvedic, Homoeopathic and Unani preparations has also been reported. Easy availability of drugs without prescription could be one of the reasons for their frequent ingestion. Though aluminium phosphide was the most common amongst agricultural pesticides, the number of cases reported was less compared to earlier studies, probably because of restrictions on its sale.

There was a high incidence of poisoning in children (25%). Though there is an increasing ingestion of pyrethroids, mainly insect repellant mats in children (<12 years of age), the highest incidence was due to accidental ingestion of drugs which could be due to therapeutic error or improper storage. Education of parents and caretakers regarding the safe storage of drugs and common household products could help decrease the likelihood of children consuming such agents accidentally. These data are likely to reflect under-reporting because of lack of awareness of the recently established NPIC.

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Emergency medicine: We need action

Miller et al. 1 have lucidly presented a compelling argument for our decision-makers to appreciate the importance of emergency medicine in India, and give it the impetus and recognition it deserves.

The traditional system of clinical education in emergency medicine relies on practising diagnostic, therapeutic and procedural skills on live patients. The prospective adoption and incorporation in medical syllabi of such training and skills will benefit future graduates and the nation in the long run. However, what can be done about the thousands of doctors already manning Emergency Departments (EDs) in various private and government hospitals? And what
can be done to empower thousands of doctors deployed in primary health centres in India, who face emergencies ill-equipped not just in equipment and drugs, but in knowledge too? The weaknesses of the system are well recognized, but the alternatives explored leave much to be desired.

A doctor at the periphery of the medical system, with some years elapsed since graduation from a medical college, with no scope for attending any specialized training in emergency medicine, is the doctor we need to have in mind while finding a solution.

Progress in the area of virtual reality and computer-enhanced simulations is now providing educational applications that show promise in overcoming most deficiencies associated with live-patient training. Reznek et al. have suggested that virtual reality techniques can be used to impart education in emergency medicine settings. While it may be a feasible option in western countries, with percolation of technology to even remote areas, prohibitive costs and maintenance, as well as technical skills that would need to be developed, preclude widespread use of such technology in India. However, it is important for academic medical professionals to become increasingly involved with this technology to ensure that our educational system benefits optimally.

The infrequent use of any skill eventually leads to its degrada
tion. Even during clinical and internship training, certain skills may be infrequently encountered. A human patient simulator (HPS) can be used to practice these skills and maintain a certain level of proficiency. The efficacy and feasibility of training isolated emergency medical personnel with an HPS have been assessed by Treloar et al. in the US Navy. Participants rated the training highly and felt that it was better than conventional non-interactive mannequins. Off-site training was found to be feasible despite the low-bandwidth service available—a setting similar to that in India. Such training may be an important adjunct for emergency medicine providers who infrequently have the opportunity to apply learnt emergency medical care skills. For the doctor at the periphery, the concept of telemedicine could be extended to include training in emergency medicine on an ongoing basis.

A 2-week, full-time training capsule, with an annual 3-day refresher attachment could be the most practicable solution to the time and manpower scarcity that plagues the public healthcare system. These could be conducted under the aegis of a Regional Medical College. Necessary training to key personnel of the medical college could be imparted as a one-time effort by designated regional centres of excellence, the principle being that of mentoring at an institutional level.

The editorial by Aggarwal et al. in the same issue highlights the relevance of emergency medicine in India. What remains is a concrete step in the right direction, which may happen when leading institutions in India adopt a proactive approach and bring their influence to bear on the issue.

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Contraceptive knowledge and practices among primigravidae at a tertiary care centre

In India, among eligible women in the reproductive age group, about 20% married women use contraception and 99% are aware of contraception. This study aimed to determine the number of planned pregnancies and to assess the contraceptive knowledge and practices among primigravidae attending a tertiary care centre.

Between April and June 2000, we interviewed 200 primigravida women first visiting the antenatal clinic of the Department of Obstetrics and Gynaecology, Postgraduate Institute of Medical Education and Research, Chandigarh. A resident doctor of the Department of Community Medicine posted to the antenatal clinic during that period conducted the interviews in the clinic ensuring privacy and confidentiality. The median period of gestation at the time of presentation was 18.2 weeks. Pregnancy intention was classified on the basis of the woman’s perception with regards to her pregnancy. If either she or her husband were upset over the pregnancy, did not want it or it was mistimed, we categorized the pregnancy as unwanted or unintended. If the women’s response indicated that she and her husband were happy about the pregnancy and had planned it, we categorized it as wanted or intended.

Sixty-two per cent of women had an urban background and among them 45.5% were living in joint families. Nearly 95% were educated (65% had studied till class 10 or more). The mean (SD) time interval for conception after marriage was 11.2 (5.5) months.

All the women were aware of contraception and 65% had acquired this knowledge through the mass media, 27.5% from their spouses and 7.5% from family physicians. This knowledge was consistent across all strata of society. This was similar to the findings of the National Family Health Survey-2 conducted in 1997–98 where knowledge about contraception was 99%. However, despite adequate knowledge, only 31% of couples practised contraception before the first pregnancy. The barrier method was the choice for contraception in 60% of any users before the first pregnancy, followed by oral contraceptive pills in 25.8%, coitus interruptus in 6% and foam tablets/jelly in 3%. Twenty-eight per cent (56/200) of the pregnancies were unplanned and were a result of irregular use of condoms by the spouse and irregular intake of contraceptive pills by the woman (50/56), while the remaining (6/56) occurred despite using contraceptive methods regularly. The results are similar to the reports from Turkey and the United Kingdom.

A limitation of our study is that our respondents consisted mainly of educated low middle class women, who were well aware of the advantages of proper antenatal care. Hence, these findings cannot be generalized, as these do not include those who seek inappropriate or no antenatal care.

This indicates that despite the availability and knowledge of effective contraception, a substantial number of pregnancies are unintended. Therefore, multiple strategies such as increasing the availability and utilization of family welfare services, stress on women’s education and employment and incorporating information about pre-conception health and family planning practices in health education need to be advocated.

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Why do we overlook data from our own country?

Tewari et al. have described in detail the primary care for eye trauma for general practitioners.\(^1\) While referring to the importance of ocular trauma, they mention the higher frequency of ocular trauma in men and in younger age groups by citing a population-based study from the USA published about a decade ago.\(^2\) We were surprised that this paper on managing ocular trauma in India does not cite recent population-based data from India.\(^3\)

These data are from an urban southern Indian population collected as part of the Andhra Pradesh Eye Disease Study.\(^4\) The history of ocular trauma was given by 6.25% of men and 1.97% of women. Multivariate analysis revealed that the history of ocular trauma was 2.1 times more common in men. Data were also reported for blindness (best-corrected visual acuity less than 6/60) and visual impairment (best-corrected visual acuity less than 6/12 to 6/60) due to ocular trauma. The prevalence of blindness in at least one eye due to trauma was 0.6% and of visual impairment was 0.7%, with men being more than twice as likely as women to have vision loss due to ocular trauma. Of the ocular trauma leading to blindness, 82.1% had occurred before the age of 40 years, and 53.6% had occurred while playing.

We write this letter to raise the issue of fascination with data from the West, even when recent and relevant data are available from India but are overlooked. The academic community needs to consciously avoid this unhealthy trend. It is time to emphasize the context-based Indian data, if we are to find sustainable solutions to health problems in India.

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Authors' reply

We thank Drs Rakhi and Lalit Dandona for highlighting the fact that it is time to emphasize Indian data. We are in complete agreement with them. However, our main purpose was to emphasize the primary treatment that a general physician can provide in an...
emergency setting when the services of an ophthalmologist might not be immediately available. Such management would be of importance to Indian as well as overseas doctors. We did not wish to highlight the epidemiological aspects of ocular trauma.

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**Tibolone, blood pressure and obesity**

A 36-year-old woman with essential hypertension on lisinopril (for 5 years) and metoprolol and nitrendepine (for 6 months) was referred to us for control of blood pressure. She had undergone a bilateral salpingo-oophorectomy for endometriosis 4 years ago and 4 months prior to being referred to us had been started on tibolone to treat her hot flushes, sweating and depressed mood. Within a month of starting the drug, her blood pressure, which was earlier well controlled by the above-mentioned medications, began to rise. She had episodic headaches associated with high blood pressure recordings. She had also gained weight (6 kg over 4 months). We suspected tibolone to have caused the weight gain and raised the blood pressure, mediating its effects via steroid receptors. On withdrawing the drug and replacing it with premarin 0.625 mg and medroxyprogesterone 2.5 mg (oestrogen and low dose progesterone), her blood pressure was again well controlled by the same antihypertensives used earlier over a period of one month. She also lost about 8 kg during the 3 months following the withdrawal of tibolone.

Tibolone, a 7-beta-hydroxy metabolite of ORGOD14- (3 alpha, 7 beta, 17 alpha)-7-methyl-19-norpregn-5 (10)-en-20-yn-3, 7, 17-triol (35),1 was looked upon as an ideal drug for hormone replacement therapy. It has been acclaimed to be a drug with no effects on the endometrium, breasts, body weight or blood pressure.2 It has been shown to induce peripheral vasodilation and has a direct effect on vascular reactivity thus increasing peripheral blood flow with no changes in blood pressure or cardiac output.3 This property has been found to benefit women with myocardial ischaemia where the time to onset of angia was increased.4 A randomized, placebo-controlled trial studying the effects of tibolone on hypertensive women showed that the systolic and diastolic blood pressures declined at the end of 6 months though the decrease was not statistically significant.5

The interaction between tibolone and beta-blockers, ACE inhibitors or calcium channel blockers has not been described. Tibolone is not a hepatic enzyme inducer and is unlikely to have caused in our patient decrease in the levels of the antihypertensives so as to account for her poorly controlled blood pressure. Hence, despite studies suggesting that tibolone has little effect on body weight and blood pressure, the converse may be true in a subset of patients. This subset of patient needs to be identified before prescribing this drug.

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**An AIDS Helpline**

The Centre for Community Medicine, All India Institute of Medical Sciences, New Delhi through its AIDS Education and Training Cell has started an interactive AIDS helpline called Shubhchintak. This helpline aims to create awareness about AIDS and answer queries from the general public about AIDS and HIV infection.

This service works between 10 a.m. and 5 p.m. on all working days from Monday to Friday. This telephonic service is available on 011-6852785.