Occasional Review

National Poisons Information Services: report and comment 1980

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Abstract

The National Poisons Information Services (NPIS) covering the United Kingdom and the Republic of Ireland currently receive over 40 000 telephone inquiries a year. Over the years there has been little change in the proportion of inquiries related to each of the main categories of poisons (drugs, household, chemical, agricultural, animals, and plants). More detailed analysis, however, shows pronounced changes in the inquiries relating to specific types of poisoning, particularly with drugs. By monitoring these trends and assessing the risks of toxicity, the NPIS has an important role in informing the medical profession of the need for preventive measures and for improved methods of treatment. At present, the NPIS cannot make full use of the available data due to inadequate staffing and lack of computer facilities. It is argued that for a modest increase in funding a much more comprehensive service could be provided.

Introduction

The National Poisons Information Services (NPIS) of the United Kingdom and the Republic of Ireland operate from a common information data base and provide a 24-hour telephone information service on the features and treatment of acute toxicity (table I). The service is available only to doctors and the emergency services. Members of the general public who telephone are advised to consult a doctor. Since 1971[1] the annual number of inquiries received by the NPIS has doubled, so that 38 426 telephone calls were handled in 1979.* Thankfully, however, the work load has remained fairly steady since 1977, suggesting that either the service is now catering for its maximum need or that its existence should be made more widely known to potential users. The type of inquiries received vary from poison "scares"—for instance, a child ate a little fruit recently sprayed with a pesticide—to serious, unusual, acute drug overdosage, (for example, disopyramide[2]), and industrial accidents—for example, fire on board a ship carrying poisonous chemicals. We consider it appropriate, therefore, to report on the current problems associated with acute poisoning and to indicate our plans for the future of the service.

*The 1980 figures for three centres, London, Edinburgh, and Cardiff are available, but they do not differ significantly from the figures reported in 1979.

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TABLE I—*Telephone numbers of the NPIS centres. In each instance the inquirer should ask to speak to "poisons information"*

Centre	Hospital	Telephone No
Belfast	Royal Victoria Hospital	0232 40503
Cardiff	Cardiff Royal Infirmary	0222 492233
Dublin	Jervis Street Hospital	Dublin 745588
Edinburgh	Edinburgh Royal Infirmary	031 229 2477
London	Guy's Hospital	01 407 7600

Current problems

Classification of inquiries into broad categories (table II) shows that the overall pattern of acute poisoning has changed little over the years. More detailed analysis of some categories, however, particularly drugs, shows distinct changes that merit comment.

TABLE II—*Major categories of acute poisoning reported to the NPIS in 1971 and 1979. (Percentages in parentheses)*

	1971	1979
Drugs	8799 (49·6)	19 486 (50·7)
Household	5392 (30·4)	11 124 (29·0)
Agricultural	1110 (6·3)	2275 (5·9)
Industrial	578 (3·3)	2192 (5·7)
Plant/animal	1277 (7·2)	2179 (5·6)
Miscellaneous	578 (3·3)	1170 (3·1)
Total	17 734	38 426

Drugs

Although acute barbiturate overdosage is now much less common, we note that the number of deaths per prescription has risen, probably due to the continued prescribing of these drugs for the elderly.[3] Barbiturate abuse remains a problem, and abusers still place heavy demands on the accident and emergency services by repeatedly presenting with relatively mild intoxication from deliberate or

accidental overdosage.[4] We are concerned, therefore, that the Government does not consider barbiturate abuse sufficiently serious to warrant spending the money necessary to control these drugs under the Misuse of Drugs Act.[5] Despite the decrease in serious poisoning from barbiturates the total number of deaths from acute poisoning by drugs has not fallen.[6] Other drugs now present serious hazards in acute overdosage and merit particular attention.

DISTALGESIC

The particular dangers of overdosage with this analgesic drug combination (dextropropoxyphene hydrochloride 32·5 mg and paracetamol 325 mg) are endorsed by inquiries to the NPIS. As few as 20 tablets can cause rapid loss of consciousness and death from respiratory depression unless adequate treatment is given.[7-9] It is often apparent, however, from inquiries that many doctors are unaware that dextropropoxyphene is a narcotic analgesic and that naloxone is a specific and highly effective antidote.[7] Furthermore, in some cases although naloxone was used promptly when the patient reached hospital, irreversible brain damage had already occurred (table III). We believe, therefore, that naloxone should be carried by general practitioners, especially as it is active against the whole range of narcotic analgesics and against the related antidiarrhoeal drug, Lomotil (diphenoxylate and atropine), which is often ingested in excess by children.[10]

TABLE III—*Distalgesic poisoning cases reported to the NPIS since December 1979 where the patient was brain-dead on arrival at hospital*

Case	Age	Sex	Alleged dose Distalgesic ingested	Other drugs ingested	Time between ingestion and arrival in hospital (h)
1	17	F	20 tablets ?	Indomethacin	½-1
2	Adult	F	Not known	Alcohol	Not known
3	21	M	Not known	Alcohol, prochlorperazine, nitrazepam	1½
4	20	M	Not known	None	?12
5	Adult	F	80 tablets	Alcohol	1

PARACETAMOL

Paracetamol poisoning from Distalgesic is seldom as serious a problem as the effects of the dextropropoxyphene. Nevertheless, paracetamol poisoning from other paracetamol-containing drugs is common. Oral methionine and intravenous N-acetylcysteine prevent hepatic and renal necrosis, provided treatment is started no later than 10 hours after ingestion of the paracetamol.[11] Urgency is the keynote of success, and both antidotes should be available in every general hospital. It is to be hoped the mortality from paracetamol poisoning will soon decline.

TRICYCLIC AND TETRACYCLIC ANTIDEPRESSANTS

Tricyclic and tetracyclic antidepressants, particularly the tricyclic compounds, are increasingly involved in acute poisoning, and we are concerned that in serious overdosage inadequate attention is being paid to supportive treatment, notably respiration, while cardiac toxicity may be exacerbated by well-intentioned but usually unnecessary use of antiarrhythmic drugs.[12] The toxicity of tricyclic antidepressants is of particular concern in children,[13] and we agree that there is a strong case for dispensing these drugs in child-resistant containers.[14] It is disconcerting, therefore, to note that the voluntary agreement on child-resistant containers for salicylates and paracetamol is not being adhered to by most pharmacies.[15]

Of the newer antidepressants, mianserin and nomifensine appear to be less toxic,[16 17] and their use is increasing. The recommended dose for mianserin has now been increased, however, and final judgment on toxicity is best delayed until more cases have been evaluated.

CHLORMETHIAZOLE

Chlormethiazole has been reported increasingly as a cause of serious acute poisoning[18 19] and is often ingested with large amounts of alcohol. It is important to emphasise that the use of chlormethiazole to treat alcohol addiction should be limited to short courses to prevent withdrawal symptoms. It should not be prescribed long term for alcoholics who continue to drink.

DRUG ABUSE

Patients who abuse drugs are prone to acute poisoning from accidental and deliberate overdosage. The NPIS records reflect the changing patterns of drug abuse.[20] We are increasingly concerned about solvent abuse (often incorrectly called "glue sniffing") and the unusual ways in which it may present.[21] An increasing number of inquiries relate to abuse of strammonium-containing cigarettes, and we question the need for such preparations.[22 23]

UNITS OF DRUG MEASUREMENT

Plasma or urine drug concentrations are a useful indication of the extent of exposure or index of risk of poisoning. Fortunately there are relatively few cases (notably poisoning due to paracetamol, aspirin, and phenobarbitone) where active treatment depends on these results. In this context we are concerned that several years after the introduction of SI units there is considerable variation in units of measurement in use in hospitals throughout Britain.[24 25] Doctors are often ignorant of the units in which their result is expressed, and we continually have difficulties related to this unnecessary and potentially dangerous problem. We urge that all drug measurements be expressed in mass units per litre—that is, g, mg, ug/l—since these are acceptable SI units and are used most commonly.

HOUSEHOLD PRODUCTS

Despite the enormous number of chemical products and cosmetics around the home, we find that serious poisoning from accidental exposure to such products is rare—for instance, cleaning products.[26 27] Obviously, the products available are always changing and we will continue to monitor them, but for the moment there is very little evidence to support the call for more safety packaging of such preparations.

AGRICULTURAL CHEMICALS

Surprisingly little serious poisoning is reported with agricultural chemicals. Paraquat remains the most important problem, and most cases are intentional rather than accidental. The safety precautions for paraquat are well publicised and the aim now must be to improve the treatment of those patients who deliberately ingest toxic amounts.[28]

POISONOUS PLANTS

Since the NPIS was established we have received many thousands of inquiries related to suspected poisoning from ingestion of plants. Most patients had no symptoms, very few suffered more than minor gastrointestinal disturbances, and we are not aware of fatalities other than very rare cases associated with the most poisonous fungi. For example, detailed assessment of laburnum ingestion has shown no serious cases.[29] We invite any doctor to send us details of any well-documented case of serious poisoning from plants.

Role of the NPIS/future plans

In this brief report we can do no more than highlight some of the current trends and problems in acute poisoning and refer the reader to more detailed papers. More importantly, we would like to indicate to potential users what the NPIS can do, what it cannot do, and what we hope it will be able to do in the future.

In the 18 years since the service was established we have

accumulated a wealth of information from individual cases and from published work. By working on a national basis we can keep costs down, maintain the confidentiality of manufacturers' data, and monitor trends in acute poisoning. Thus we believe that we provide most inquirers with basic information on the expected acute toxicity, or non-toxicity, of most poisons, and can indicate the most likely course of events and the treatment required. While the information is normally given first by non-medical personnel, there is 24-hour medical cover, and the user and informer can always request direct medical advice. In more serious or more unusual poisonings we try to provide additional information culled from previous cases, published work, or laboratory analyses.[30]

There are, however, three definite limitations in the service that should be rectified.

(1) We face a major task in trying to keep the information up-to-date since all additions and corrections to the poisons register must be made manually, and any one change in information may be applicable to many poisons. Up-dating the information would be faster and simpler if the main data base were computerised. In the past this suggestion has not been practicable, but with improvements in computer technology computerisation is now feasible if funds can be provided.

(2) It is impossible to make the fullest use of information gained from previous cases because the records have to be searched manually. Feedback from cases of acute poisoning is important for increasing knowledge and in monitoring for safety, particularly in respect of drugs.[31] It is also the most important means of assessing the value of information given. The fullest use of this information can be achieved only with a computer-based data-management system, and the London centre has piloted such a scheme.[32] We plan to extend this system to take the initial and outcome information on all cases referred to London and subsequently from other centres.

(3) Although we answer relatively small numbers of inquiries concerning suspected acute poisoning from industrial chemicals, it is for this type of poisoning that information on toxicity and treatment is most difficult to find. Nevertheless, the London centre is starting to collect information on the acute toxicity of industrial chemicals and to establish closer links with experts dealing with related aspects such as decontamination and control of pollution.

Obviously these plans require an increase in funding for the NPIS at a time when NHS spending is being curtailed. We suggest, however, that the savings resulting from such developments will amply repay the costs.

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A 60-year-old patient suffers from ischaemic heart disease that first manifested itself as transient attacks of supraventricular tachycardia associated with a sensation of tightness in the chest. He has been taking metroprolol tartrate (Betaloc SA) (200 mg) each morning for over a year, and his condition has been absolutely normal. He now complains that on the last two occasions orgasm has been accompanied by overwhelming headache, which led him to believe that he was about to have a stroke or even die. What is the nature and management of this phenomenon?

Two types of "coital cephalgia" have been described[1]: one a steadily increasing headache starting at the time of arousal and probably caused by muscular tension; the other an explosive headache precipitated by orgasm. This patient seems to have the second type. The cause of the "type 2" headache is thought to be vascular, but the mechanism is not clear: blood pressure rises during intercourse to a maximum at orgasm—indeed, orgasm may cause subarachnoid haemorrhage—but coital cephalgia is not confined to the hypertensive. It may in some cases be associated with cerebrovascular insufficiency. The best treatment is still uncertain, but propranolol has been used successfully[2]—so it is particularly unfortunate that this patient's symptoms may have been precipitated by beta-blockade. Coital cephalgia has not previously been described as a side effect of beta-blockers, and in the absence of previous experience treatment must be by educated guesswork. The patient's blood pressure should be checked and the possibility of an alternative treatment for his arrhythmia considered. If beta-blockade is thought to be the best treatment—for example, if he is hypertensive—a different agent could be tried, since side effects of one beta-blocker may not be encountered with another.[3] If treatment is changed two points should be borne in mind: impotence is a more common side effect of beta-blockers[4]; and coital cephalgia is often intermittent, occurring on some occasions and not others—so some time must elapse before the patients' new treatment can be assumed to be successful.

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