

Topics in Therapeutics

Edited by A.M. Breckenridge



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TOPICS IN
THERAPEUTICS

Editor's Foreword

It has been said that there are six stages in the organisation of a meeting. The first, enthusiasm, is followed in quick succession by despondency and panic. Based on this, there is a search for the guilty, and the finding of a scapegoat with the consequent punishment of the innocent. Finally comes the rewarding of those who had nothing to do with the organisation.

This first meeting on therapeutics in the Royal College of Physicians has not followed that pattern. It has been characterised by unabated enthusiasm since its conception, well illustrated by the fact that not one of the initial list of invited speakers or chairmen turned down the invitation to participate. The organising committee, James Crooks, Donald Davies, James Paterson, Laurie Prescott, Peter Ball and I, are most grateful to all these participants for their contributions. Convinced as we are that therapeutics is one of the most important parts of current medical practice, we feel sure that our meeting will be the first of many such in the College.

Personally, I wish to express my gratitude to my secretaries Miss Bernadette Edinborough and Mrs Yvonne Foster for their invaluable help. Miss Sally Freeman, Conference Secretary of the Royal College of Physicians, dealt most expertly with great numbers of problems. Finally, may I express my thanks to Mrs Betty Dickens of Pitman Medical Publishing for the charming manner in which she cajoled us all into producing the manuscripts that made this book possible.

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Chairman's Opening Remarks

SIR DERRICK DUNLOP

We have a very important subject to discuss this morning, for accidental poisoning and self-poisoning now constitute one of the most common causes for emergency admission to our general hospitals — and one of the most frequent causes of death among young people. Self-poisoning is a preferable term to suicide for the sub-conscious motive of most of those who poison themselves is normally just to create a crisis providing an escape from some intolerable personal problem rather than actually to kill themselves. The present epidemic of self-poisoning seems more common in Welfare States than in countries where the primary concern of the population is how to keep alive. Perhaps it is significant that the four countries with the lowest mortality from self-poisoning in the Western World should be devoutly Catholic, but in these countries such deaths tend to be under-reported so as to permit of appropriate burial rites.

The epidemic of self-poisoning in the last fifty years correlates with the increased use of psychotropic drugs: it seems that all the frustrations, anxieties and disappointments of everyday life are now an indication for drug treatment. Such agents offer a more comfortable means of destruction than throat-cutting, hanging, drowning or drinking lysol. Further, it is simpler in a pet to draw attention to oneself by taking a handful of pills from the family medicine cupboard — so often replete with unused tablets of a psychotropic nature — than to develop an attack of acute hysteria or 'the vapours' which was a more common reaction in Victorian and Edwardian times. In addition, the attractive flavour and colourful presentation of modern medicines encourage the accidental poisoning of little children.

Barbiturates used to constitute about 60% of the agents used for self-poisoning. They now only account for about 20%, but there has been a corresponding rise in the incidence of poisoning by tranquillisers and anti-depressants. With the considerable substitution of natural gas for coal gas the incidence of CO poisoning has been much reduced. Salicylates continue to account for about 15% of poisoned patients but in recent years, largely consequent on publicity given to it in Coroners' Courts, there has been an increase in self-poisoning by paracetamol, which is certainly among the safest of all effective remedies in therapeutic doses, but among the most dangerous when used as a poison.

The Size of the Problem

ALEXANDER A H LAWSON

Acute poisoning is now a common and urgent medical problem. Goulding (1971), estimated that 50,000 adults in the United Kingdom were admitted to hospital every year because of poisoning. In major hospitals throughout Britain, patients suffering from acute poisoning have accounted for between 10% and 25% of all acute medical admissions (Curry, 1965; Ellis et al, 1966; Jones, 1969; Lawson & Mitchell, 1972 and Matthew & Lawson, 1974). There is no evidence that the trend is altering and it therefore constitutes a major service commitment to hospitals in this country. The medical and social problems associated with this are by no means confined to the United Kingdom, and similar trends are found in virtually all developed countries throughout the world (Goldberg, 1968).

Over the years, despite great improvements in intensive therapy, the annual mortality from acute poisoning in Britain has increased to almost 7,000 and this number of deaths is nearly as high as that due to road accidents. Although much propaganda is devoted to "keeping death off the road", relatively little has been achieved in the prevention of poisoning incidents. In the last 12 years two Government reports (Central Services Council 1962; Central and Scottish Health Service Council, 1968), have recommended that district and regional poisoning treatment centres should be established widely throughout the country, but although various hospitals have been designated for this purpose, very few specialised units have in fact been established (Matthew et al, 1969). The great majority of patients with acute overdosage still must be managed in general medical units under the supervision of general physicians without any special arrangements for the treatment of poisoning.

In the Royal Infirmary, Edinburgh, however, there has existed over the past 90 years a centre which has been modified to meet these requirements. The figures from this unit therefore provide a rather unique opportunity to illustrate just what happened. The marked increase in the annual admission rate to that unit is shown in Figure 1. The increase is a real one, since there has been no change in admission policy over the years. The graph shows a most dramatic rise in the last 25 years since the inception of the National Health Service. Ninety per cent of all patients, with the exception of children below the age of 12 years, with acute poisoning in Edinburgh and the surrounding area, are treated in the Treatment Centre and so the figures may be claimed to represent accurately the overall trends. Acute poisoning is commonest between the ages of 18 and 25; in

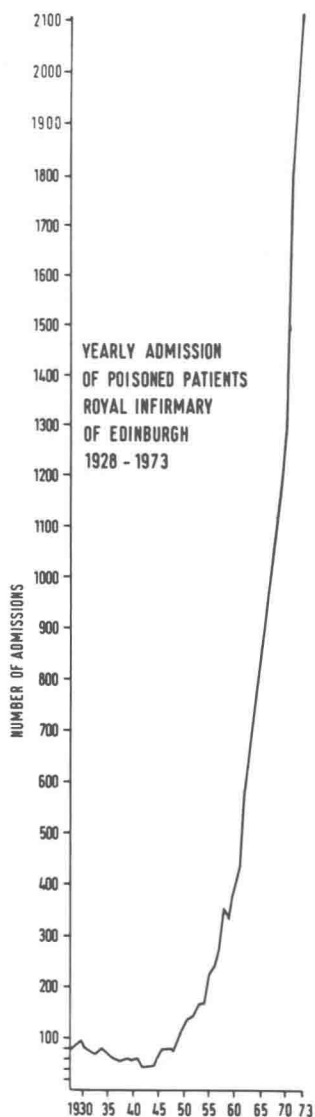


Figure 1. Annual admission of patients admitted to the Poisoning Treatment Centre, Royal Infirmary, Edinburgh (1928–73). (Matthew & Lawson 1974, by permission of the publishers, Churchill Livingstone.)

this group the incidence is now almost as common in males as in females, but in other age groups it is approximately two females to one male. There is no reason to indicate that Edinburgh people behave in a different manner from others, and rather similar reports have been received from other cities throughout Britain (Sydney Smith & Davison, 1971; Patel et al, 1972).

Although the Edinburgh figures are representative of areas of dense conurbation it is important to recognise that there are differences when small town and semi-rural practice is studied, and even more so when a predominantly rural area is examined. In my own hospital, which is only 15 miles from Edinburgh and supplies the medical services to a population of 130,000 from a mixed urban and rural area, the annual incidence of patients admitted with acute poisoning is shown in Figure 2 (Lawson, 1974). This illustrates the results of a survey done over 12 years from 1960 to 1971, and, apart from some minor fluctuations, the annual admission rate was fairly steady until 1968. In the last three years of the study, however, there was a dramatic and progressive increase in incidence and in this relatively short time 383 patients were admitted accounting for 41% of the total poisonings in the whole 12 years. In 1960, for example, acute poisoning constituted only 4% of all medical admissions, whereas in 1971 the figure was 12%. The major increase in the admission of poisoned patients in this type of practice is, therefore, a much more recent event than is the experience in large cities. Tulloch (1972) studied a predominantly rural area in the north-east part of Scotland, and found a very much lower incidence and differences in motive from most published series, in that genuine attempted suicide was common.

In the Edinburgh figures, the increases in incidence apparently occurred simultaneous to the start of the National Health Service and the natural inclination is to blame the ready availability of drugs prescribed on the Health Scheme. The increase in recent years in prescriptions issued under the National

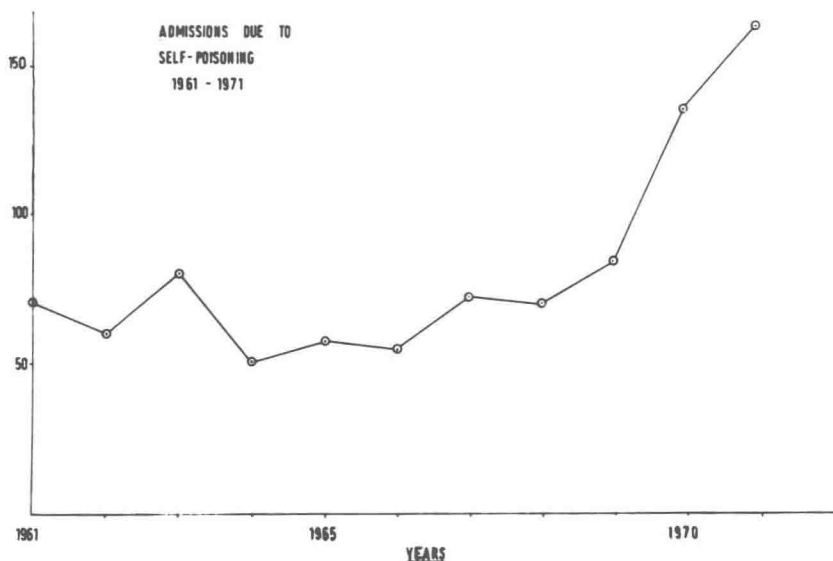


Figure 2. Annual admissions of patients with acute poisoning to Milesmark Hospital, Dunfermline, Fife (1961-71).

TABLE I. Increase in number and cost of N.H.S. prescriptions (1962-1969).

	NUMBER	COST
1962	196,000,000	£87,000,000
1963	205,000,000	£95,000,000
1964	209,000,000	£105,000,000
1965	244,000,000	£126,000,000
1966	261,000,000	£138,000,000
1967	271,000,000	£146,000,000
1968	267,000,000	£152,000,000
1969	283,000,000	£163,000,000

Health Service is shown in Table I. There is no doubt that this is a major factor as there must be few households in Britain today where there are not potentially lethal quantities of various hypnotics, sedative and perhaps psychotropic drugs. Further evidence of this can be obtained from the changing pattern of drugs taken in the poisoning incident. This is shown in Figure 3. The relative frequency of barbiturate poisonings, for example, has undergone considerable change; in 1965, barbiturate poisoning constituted 60% of all poisonings, whereas in 1973 the figure was only 20%. Other hypnotics, Mandrax (which is a combination of methaqualone and diphenhydramine), and phenothiazines have also declined in

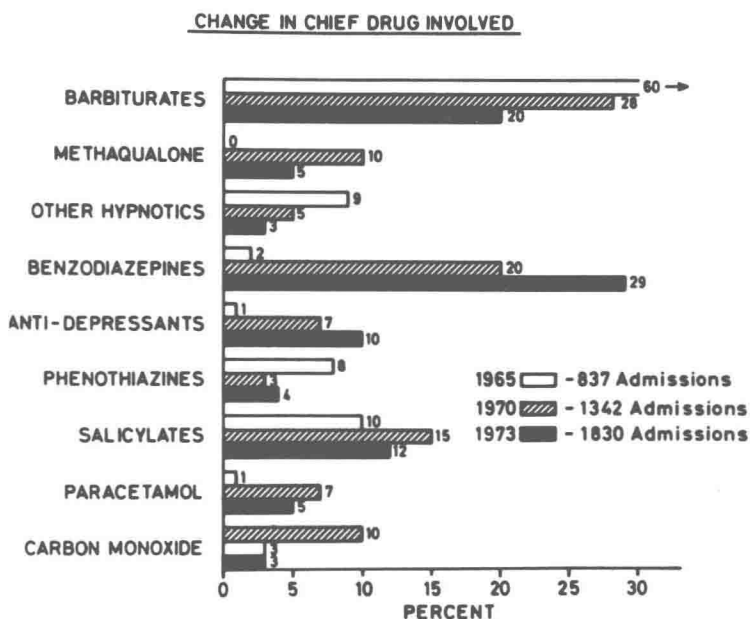


Figure 3. Changing patterns of drugs taken for poisoning in patients admitted to Poisoning Treatment Centre, Royal Infirmary, Edinburgh, (1965-73). (Matthew & Lawson 1974, by permission of the publishers, Churchill Livingstone.)

incidence, whereas striking increases have occurred in poisoning with benzo-diazepines and antidepressant tablets, which are now prescribed so liberally for the very patients most likely to indulge in self-poisoning. In contrast to the increasing frequency of overdosage with these drugs, poisoning with other groups of substances such as arsenic, Lysol and similar 'non-ingestants' has become very much less popular and carbon monoxide poisoning is now also relatively infrequent. Salicylates, which have always been easily obtained, remain common. Another result of the ready availability of drugs in recent years is that commonly more than one drug is ingested at any one time and alcohol is also much more frequently involved (Patel et al, 1972; Lawson & Matthew, 1974). This leads often to considerable difficulty in diagnosis and assessment in severity of the poisoning in view of the complexity and bizarre nature of the clinical features which may be present.



Figure 4. Number of aspirin tablets obtained in 30 minutes.

Drugs may be obtained, of course, other than by prescription and to illustrate this a young girl volunteer was asked to visit any chemist's shop which she encountered, to ask for the pharmacist himself and to request 100 aspirins. She was to maintain a tearful and depressed attitude throughout. In half an hour she visited five shops and despite her apparent distress, the number of tablets which she bought is shown in Figure 4. In only one chemist's shop was any comment made about her emotional upset; in none of the shops was any objection or even hesitancy shown in the giving of the tablets. In one shop she was offered a cup of tea and it may be suggested rather facetiously that this was given simply to wash down her tablets. There is no doubt that availability of drugs in the community is a very important cause of increased overdosage, but further examination of this problem indicates that this is by no means the only cause.

The increased incidence is the result of an increase in two types of poisoning. The first is accidental poisoning, which has risen steadily in this country, especially in children. Scotland holds the unenviable world record as the country in which the highest percentage of deaths from accident are attributable to poisoning and gassing. In Canada only 9% of fatal domestic accidents are due to poisoning whereas 30% is the figure in this country. A likely cause for this dramatic difference is variation in death certification, but the situation must still give cause for concern. Striking though these statistics are, the real increase in poisoning is not from accidental poisoning but is due to intentional overdosage and in particular what used to be called 'attempted suicide'. Anyone who has experience of managing patients with acute poisoning today soon realises that the patients who genuinely wish to die are in the minority and the motives leading up to their admission are far more varied.

Kessel (1965) therefore instituted the term 'self-poisoning' to describe the act which was a far more general concept and did not indicate motive in itself. It is usually a conscious and often impulsive act, undertaken to manipulate a situation or a person in order to change circumstances which have become intolerable. These patients may express this in several ways — "I was fed-up" "I could not go any longer"; "I just wanted to sleep and sleep". This situation could therefore be described as a wish for 'a flight into oblivion'. Often, such behaviour is considered manipulative, but on the other hand it may draw attention to severe stress and even severe illness and it may be that the most distressed member of the family is not necessarily the one admitted, and the self-poisoning incident simply draws attention to illness in another important family member. The impulsive nature of the self-poisoning act is frequently a prominent feature and alcohol is often involved (Lawson & Matthew, 1974). There is no doubt that these patients are frequently successful in their aims and relatives often rally to the help of the unfortunate victim and by virtue of our available social services, the situation which has caused the distress is rectified. Mistakes, however, do occur through a misjudgement of dosage or a failure to ensure that help would be to hand. As a result, an act which was committed merely to draw attention to a particular situation may end in death.

The alarming increase in the incidence of acute poisoning is undoubtedly mainly due to self-poisoning which now accounts for approximately 85% of all adult patients admitted to hospitals. Genuine attempted suicide where there is a real wish for self destruction occurs in about 10% of admissions and the remainder are thought to be accidental. Every year in Edinburgh, one in every 1,000 of the adult population and one in every 600 of all teenage girls in Edinburgh indulge annually in self-poisoning, and elsewhere in Britain it has been suggested that one in every 100 married teenage girls behaves in this manner (Matthew & Lawson, 1974).

This situation, therefore, is a real social problem. The social and environmental factors involved in acute poisoning have been described in a number of

TABLE II. Social factors involved in self poisoning in a sequential group of 665 patients admitted to Milesmark Hospital, Dunfermline (Mitchel & Lawson (1974).

	SOCIAL FACTORS	PERCENTAGE INCIDENCE
COMMON CAUSES	Marital Disharmony	62.3
	Chronic Physical Disease	9.4
	Unemployment	9.1
	Unhappy relationship with a close relative	8.4
	Financial problems	8.1
	Disagreement with boy or girl friend	6.5
LESS COMMON CAUSES	Pregnancy	5.0
	Criminal record	4.5
	Major problem with alcohol	3.5
	Death of important figure	2.2
	Recent incomer	2.0
	Transient resident	1.7

reports (Kessel, 1965; Matthew et al, 1969; Aitken et al, 1969; Mitchell & Lawson, 1974) and although there are some differences between areas, the outstanding cause in all reports is difficulty in interpersonal relationships such as with a close relative, marital partner or boy friend or girl friend, as the case may be. This is demonstrated in Table II. Other factors, such as financial problems and unemployment, although not insignificant, are perhaps less important than might be expected.

In view of the high incidence of acute poisoning in our community, it is clearly important to have a considered pattern of management for these patients. This depends first of all on the physician practising a high standard of intensive supportive treatment in order to counteract the effects of the poison taken by an individual patient. With modern techniques intensive supportive therapy has proved extremely effective and the overall mortality should now be less than one per cent (Matthew & Lawson, 1974). This is demonstrated in Figure 5, which shows the results of various regimens of treatment during the last 30 years. In 1945 no fewer than 25% of all patients with acute barbiturate poisoning died. With improved methods of treatment of shock and maintenance of the airway, this mortality was reduced to 10–15% by the late 1940s and the next major advance was the introduction in Copenhagen of a specialised centre for the treatment of acute poisoning. In one year Clemmesen and Nilsson (1961) reduced the mortality by one half by avoiding use of analeptic drugs. The mortality has been further reduced over recent years by marked improvements in respiratory care and cardiac resuscitation. I think it is true to say that in any hospital with modern facilities of this kind, the mortality from poisoning should be very low.