

## **Principles of diagnosis and treatment of addictive drugs overdose**

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**A**DDICTS use a variety of drugs, all of which have special actions on the central nervous system, some depressing function and some exciting over-activity of the cells. Each type of drug may be taken to excess, and the illness resulting may be acute or chronic.

The patient (or rather the victim) takes the drug to escape from his problems, and may accidentally overdose himself; or, having achieved a pleasant experience from a modest dose, may foolishly feel that a larger dose will have an even better effect. Other reasons for taking overdoses may be social, due to mistaken or malicious pressures brought upon the victim by associates. Sometimes a sympathetic youngster, with good insight into the evils of the world (especially as evidenced by the 'establishment') develops a rebellious, frantic desperation, trying to alter things beyond possibility, and turning to drugs in despairing impotence.

### **The victim's personality**

It is possible to generalize to some extent on character traits of the patient self-poisoned by overdose of addictive drugs. He, or she, is likely to be young and inexperienced, often with a neurotic depressive or anxious state underlying a poor adjustment to social situations. Personal appearance may be neglected, and yet dress may be of a flamboyant, 'different' character. Dirtiness and carelessness may be evident, though the victim may be intelligent and affectionate.

Each urban locality will produce its 'social misfits' with their own style of dress (or undress!), meeting in some flat or house to the annoyance of neighbours, playing what they conceive to be music in the small hours; not co-operating well in disposal of waste and living a 'bohemian' life. Cannabis is often smoked in self-rolled cigarettes (reefers) during their orgies, and alcohol or its substitutes may be taken in addition. The 'hard drugs' also are sometimes discovered by the police when such 'dives' are raided. Against such a background an unco-operative, confused or rebellious patient may well be suspected of being under the influence of drugs. This is the first point in diagnosis.

### **Disturbance of consciousness**

The obvious manifestation of excessive drug-taking is disturbance of consciousness. This may range from excitement to coma, and has to be distinguished from the other conditions which may mimic it:

- Mental disorder—the psychoses and severe neuroses (drugs may have been taken for the treatment of these on medical prescription)
- Head injury
- Cerebrovascular disease
- Infections or tumours of the CNS
- Epilepsy
- Increased intracranial pressure
- Shock with severe hypotension (haemorrhage, myocardial infarction, etc)

Diabetes  
 Uraemia  
 Hepatic coma  
 Addisonian crisis  
 Accidental poisoning from non-addictive agents. e.g. coal gas, weedkillers, etc (or deliberate self-poisoning)  
 Electric shock  
 Toxaemia  
 Asphyxia and anoxia

Some of these may co-exist with the effects of overdose of addictive drugs; for instance, it is commonplace to have to try to separate the effect of a head injury from that of excessive alcohol intake.

It is important to try to get a history direct from the victim at once, so that if his consciousness becomes more clouded a further handicap will not have been allowed to hinder diagnosis. It is never possible to be sure that the condition will not worsen, and urgent hospital admission of the self-poisoned is important unless emergency conditions or distance prevent this.

Emergency steps may also have to be taken to ensure a good airway, if necessary by tracheal intubation, and to provide artificial respiration if the victim's colour is not good. Not only cyanosis, but also pallor must be taken as an indication for assisted respiration, for an anaemic victim may not show cyanosis, and serious anoxia may be present in the absence of a blue skin.

#### Central nervous system manifestations

*Excitement.* Most of the effects of addictive drugs are familiar, being commonly seen in the various stages of acute alcoholism. Excitement is easy to recognize, though not so easy to assess. It may be due to mania, stimulating news, lively company, sexual arousal, the effects of arrest, or even to a deep religious experience. The pupils are dilated, movements exaggerated, talk free, mood euphoric, and so on. The victim is optimistic, attempts too much at too high a speed, and mistakes increase. These effects may be produced by appropriate doses of stimulant drugs, for example, Dexedrine. Depressant drugs may also produce elevation of mood and excitement in the early stages of their action. Inhibitions may be released and a care-free attitude be evident. Presumably this is why the victim takes his dose in the first place—to obtain an artificial brightening of a drab outlook.

*Depression.* When stimulants are taken in overdose, after initial stimulation has exhausted the cells of the CNS, depression follows and function is reduced progressively. Depressant drugs prescribed to induce sleep may cause serious depression of the CNS if taken to excess. The victim sinks towards coma, first being drowsy and possibly enjoying a dream-like state, with irritability at any disturbance of it. This irritability may show itself in uncontrolled violence owing to the release of inhibitions normally imposed by the higher centres when they are functioning unimpeded.

As the effects of the drug increase, the ability of the victim to stay awake, or to respond to stimuli, gets less. At an advanced stage danger to life begins when respiration becomes inefficient, and the damaging effects of anoxia begin to aggravate the depression of the CNS cells. If help with respiration is not given in time, the next centres to fail are those controlling vascular tone, and a state of irreversible shock may develop. Even with all the resources of a hospital it may then become impossible to restore the victim to health.

#### Treatment

The object of treatment must be to maintain vital functions until the drug has been eliminated or has worn off. Sometimes a stomach wash-out may prevent the absorption of some of the drug, and if the victim is still conscious this procedure may have a salutary

effect on his or her future drug-taking activities. Though it is arguable that punitive measures do not play any part in the practice of medicine, it sometimes happens that the treatment of choice is something that the patient may hope to avoid having repeated. Stomach washings, especially the first, should be preserved for possible forensic study later. If artificial respiration (having first made sure of the integrity of the airway) is efficiently performed, it is unlikely that irreversible shock will ensue, though the vascular tone may become minimal and fluid infusions may be needed to maintain the functions of the kidneys. If there is hypotension, a head-down posture is mandatory so that the cerebral circulation is maintained. A systolic pressure under 60mm Hg for more than two hours may have disastrous effects on the renal cells. The kidney may also suffer from high concentrations of the drug which it may have to excrete in the urine. A diuresis is helpful to get rid of the drug and to dilute the urine.

*Antidotes.* There is little place for drugs which combat the effects of other drugs in the field of drug addiction. Stimulants, to counter depressants, and *vice versa*, have an obvious appeal, but it should be apparent that to 'flog a tired horse' may cause its complete collapse, and to add a depressant to a situation which may later be followed by serious depression is folly.

It is best then to wait and see how the patient progresses, meeting any failures of the CNS as and when they are detected. Clearly a hospital environment gives the patient his best chance.

*Oxygen* may be of value, but it is not a substitute for adequate respiration. When breathing oxygen the patient may be a healthy pink colour, but there may be a build-up of carbon dioxide if the respiratory tidal volume is not adequate, and this can add further toxic effects.

Later possible complications include pneumonia, possibly from aspiration of stomach contents, and this may be serious. Bed sores, and renal shut-down, of temporary or permanent form, can follow deep unconsciousness. A ripple mattress is useful in nursing these patients. Electrolytes need to be monitored and disturbances corrected by appropriate infusions.

If fits occur during cerebral excitement, the most suitable treatment is valium by intravenous injection—an exception to the no-drugs rule—to meet this special complication. Doses should be small, and repeated until just sufficient has been given to check the convulsions. The amount will vary from case to case. But if the fits are due to cerebral anoxia, then the best treatment is to get oxygen to the brain by improving the circulation and respiration by such means as are available and delivering oxygen to the lungs with an efficient respirator. The airway must be made good by endotracheal intubation if necessary and cardiac massage may also be needed. The head should be low. Well-oxygenated blood is no use to the brain if it does not leave the lung and reach the head in adequate amounts.

Hypothermia may need correction, and recommended practice is to allow the victim to warm up slowly in a warm room. Cardiac arrhythmia can be a problem if the temperature of the body sinks too low. Ventricular fibrillation can occur under such conditions.

After the immediate effects of the drug have worn off, it may be helpful to give the victim psychiatric and social support, to try to prevent recurrences. This type of treatment is the most costly in terms of personal involvement, and the least fruitful, but successes do occur and it should be attempted.

### **Chronic overdose**

The outstanding example of this is alcoholism. Acute episodes apart, the main

problem is to get the victim to see that his reaction is one which does not solve his problems, but aggravates them. Together with this he must be offered some better method of meeting his needs.

At first, regular doses of a tranquillizer may help, e.g. Largactil up to 200 or even 300 mg daily, though smaller doses should be tried first. Librium, 30 mg a day, may be effective, and is less likely to cause jaundice.

Often a hostel with kindly, firm supervision helps to deal with the victim's essential needs of protection from the cold, from hunger (and to some extent from boredom). A good warden can revive the feeling of being of some use in the world, and perhaps inculcate a sense of purpose and hopes of a better future.

But the main difficulties, expense apart, lie in the personalities of the victims who have already been defeated after trying their poor utmost, and who know (only too well) how heavily the social cards are stacked against them. It is unlikely that they will ever be able to withstand, unsupported and unprotected, the stresses and demands of modern life.

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#### **How to become a member or associate**

Registered medical practitioners may become members of the College if they have undertaken suitable postgraduate training for general practice, and if they satisfy the Board of Censors of the College (the examining body) that their training and experience for the responsibilities of general practice have been adequate and satisfactory.

A practitioner who wishes to become a member of the College must submit an application nominating two medically-qualified referees, one of whom must be a member. Applications must include an undertaking by the candidate, if admitted, to uphold and promote the aims of the College to the best of his ability, and, while a member of the College and in active practice, to undertake approved postgraduate study.

Registered or provisionally-registered medical practitioners may become associates of the College without having undertaken special vocational training, and without examination, but any provisionally-registered practitioner ceases to be an Associate if he fails to obtain full registration within two years of qualification.

A practitioner who wishes to become an associate must submit an application which includes an undertaking to uphold and promote the aims of the College to the best of his ability, and while in active practice, as far as is practicable, to continue approved postgraduate study.

Further details and application forms may be obtained from **the Administrative Secretary, The Royal College of General Practitioners, 14 Princes Gate, Hyde Park, London, S.W.7. Telephone: 01-584-6262.**

#### **Registration of F.R.C.G.P. and M.R.C.G.P.**

The Administrative Secretary has advised us that details of all fellows and members of the College have been notified to the General Medical Council in London, Edinburgh and Dublin and there is now no need to make individual application to have the qualification M.R.C.G.P. registered.

The general Medical Council will be kept informed of new fellows and members.