

SIDE EFFECTS OF DRUGS

Cardiac arrhythmias caused by chloral hydrate

In 12 months only two patients were admitted to an acute medical unit after taking an overdose of chloral hydrate. Both developed serious cardiac arrhythmias.

Case 1

A 29-year-old woman swallowed about 15 g of chloral hydrate with sherry. On admission two hours later she responded only to painful stimuli, and, although breathing spontaneously, she was cyanosed. Her systolic blood pressure was 50 mm Hg. She had an irregular pulse and an electrocardiogram was recorded (fig 1). After 10 mg of intravenous practolol atrial fibrillation developed but reverted to sinus rhythm within five minutes. With the restoration of normal rhythm the blood pressure rose to 110/70 mm Hg. She regained consciousness seven hours later. Clinical and electrocardiographic examination confirmed the absence of any cardiac abnormality.

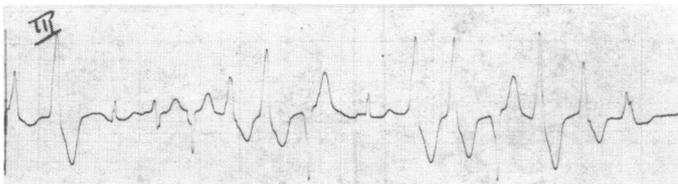


FIG 1—Case 1. Electrocardiogram showing arrhythmias.

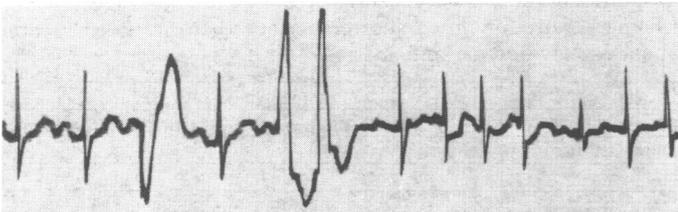


FIG 2—Case 2. Electrocardiogram showing arrhythmias.

Case 2

Ninety minutes after taking 10 to 20 g of chloral hydrate with alcohol a 64-year-old woman was admitted deeply unconscious with an irregular pulse. Her blood pressure was 70/50 mm Hg. Electrocardiographic monitoring showed arrhythmias, which persisted for seven hours (fig 2). She was given no anti-arrhythmic drugs and reverted spontaneously to sinus rhythm. Her blood pressure rose at once to 160/100 mm Hg. She gradually regained consciousness and was discharged from hospital two days later. Clinical examination, an electrocardiogram, and chest radiograph showed nothing abnormal.

Comment

Arrhythmias after poisoning with both tricyclic antidepressants and phenothiazines are now well recognised.^{1 2} Chloral hydrate is generally considered a safe hypnotic and is often recommended for children or elderly patients. Its chief disadvantages are an unpleasant taste and an irritant effect on the stomach, which are minimised by prescribing it diluted and mixed with syrup—the chloral mixture taken by both these patients. Acute poisoning causes stupor and vasodilation, and death may result from respiratory depression. The combination of chloral hydrate and alcohol is known to be additive, resulting in higher plasma concentrations—an interaction which, when popularly realised, resulted in the "Mickey Finn" cocktail for rapidly inducing unconsciousness.

Arrhythmias are not well documented as an adverse reaction, although a therapeutic dose of chloral taken with alcohol may cause tachycardia and hypotension.³ After an overdose the first patient

showed a principally uniform ventricular tachycardia, though some beats had a totally contrary direction. There were junctional escape beats with capture of the ventricles, suggesting the possibility of depressed sinus function perhaps associated with the subsequent development of atrial fibrillation. The second patient developed an essentially similar arrhythmia.

Levy, who in 1911 reported death during light chloroform anaesthesia,⁴ recognised that the ventricles fibrillated and that the myocardium was sensitised to circulating catecholamines. These chloral-induced arrhythmias suggest a condition not dissimilar to that seen with chloroform. Both chloral hydrate and chloroform are hydrocarbon anaesthetics, and the successful reversal of the arrhythmia with practolol in case 1 supports the theory that chloral hydrate sensitised the myocardium to catecholamines and that the effect was reduced or abolished by beta-blockade. One other report has described a patient who developed ventricular arrhythmias complicated by cardiac arrest after chloral hydrate.⁵ Alprenolol reversed the arrhythmia.

I thank Dr D W Barritt for allowing me to publish details of patients under his care and Dr Dennis Krikler, consultant cardiologist at the Royal Postgraduate Medical School, for his helpful advice.

¹ Barnes, R J, Kong, S M, and Wu, R W J, *British Medical Journal*, 1968, **3**, 222.

² Schoonmaker, F W, Osteen, R T, and Greenfield, J C, *Annals of Internal Medicine*, 1966, **65**, 1076.

³ Chapman, A H, *Journal of the American Medical Association*, 1958, **167**, 273.

⁴ Levy, A G, *Journal of Physiology*, 1911, **43**, 18.

⁵ DiGiovanni, A J, *Anesthesiology*, 1969, **31**, 93.

(Accepted 15 August 1977)

Bristol Royal Infirmary, Bristol BS2 8HW

A J MARSHALL, MRCP, senior registrar in medicine

Paranoid psychosis with indomethacin

Psychosis associated with indomethacin treatment has not been previously reported.

Case report

A 65-year-old married woman developed rheumatoid arthritis in mid-1970, and two years later began treatment with indomethacin, 100-150 mg by mouth daily. Over the next four years salicylates, steroids, gold, and intra-articular yttrium were also given but without success, and in February 1976 arthrodesis of the left knee was performed. She made an uneventful recovery and was discharged taking indomethacin as maintenance treatment. No other drugs were prescribed.

Soon after returning home she began to have mental symptoms, with morbid jealousy of her husband, paranoid delusions about her family, visual and olfactory hallucinosis, and loss of weight (5 kg; normal weight 60 kg). In November 1976 she claimed that loudspeakers emitted poisonous gases, the television was maliciously influenced to produce bright colours, and a mist covered her windows each morning. She stated that she was first convinced of her husband's infidelity when, on fetching her from the hospital, he had replied "no" to her question, "Did you miss me?"

On examination of her mental state she was inattentive but her consciousness was clear and there were no other noticeable affective or cognitive changes. There was no evidence of other physical disease nor any previous history of serious physical, psychiatric, or marital disorder or allergy or hypersensitivity to drugs. She denied abusing drugs or alcohol. Her family described her as normally stable, hard-working, conscientious, and slightly introverted. There was no family history of adverse drug effects.

Indomethacin was withdrawn over the next four weeks, and until March 1977 she received chlorpromazine 100 mg daily for the psychiatric symptoms. She made a rapid, sustained improvement, becoming free of mental symp-