Arrangements for on scene medical care at major incidents

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The regulations on arrangements for dealing with major incidents,¹ issued in October 1990, required all listed hospitals to draw up a major incident plan, designate a medical incident officer, and arrange for a mobile medical team. This study investigates the extent to which hospitals have responded to the last two provisions.

Methods and results

I sent a questionnaire to 100 randomly selected accident and emergency departments. Non-responders were contacted once by telephone. The questionnaire asked the identity and training of the medical incident officer; the members, training, and experience of the mobile medical team; and whether action cards were issued.

Ninety three departments returned questionnaires. Five departments were excluded from analysis because the procedures were undergoing major revision, leaving 88 for analysis.

The medical incident officer was a member of an immediate care team in six hospitals, a hospital consultant in 80 hospitals, and a senior house officer in two. Twenty nine departments specified an accident and emergency consultant and eight a member of the hospital flying squad. Eight had chosen physicians, eight anaesthetists, five orthopaedic surgeons, 10 obstetricians or urologists, and 14 other specialists. Training was given through practical exercises in 16 departments, table top exercises in five, courses in 14, and local immediate care schemes in seven; 46 hospitals gave no specific training.

The mobile medical team leaders included various specialties and grades (table). Only 10 teams had experience in treating patients before arrival at hospital. Four teams were trained in conjunction with the emergency services and five trained with a flying squad or immediate care scheme. In 23 cases training was not specified and 56 had no training. Action cards were issued by 66 hospitals.

Comment

The regulations state that the medical incident officer should be a "senior clinician with appropriate

Grade and specialty of mobile medical team leader

Specialty	Consultant/senior registrar	Registrar grade	Senior house officer	Other	Total
Accident and emergency	14		8		22
Surgery	5	16	2		23
Orthopaedics	14	11	3		28
Gynaecology	1	2			3
Ear, nose, and throat		1			1
Radiology	1				1
Unspecified	3				3
Immediate care scheme				7	7
Total	38	30	13	7	88

experience and training." But over half receive no training. Although courses improve theoretical knowledge, they do not improve familiarity with local equipment and staff. Only 28 incident officers took part in exercises and minor incidents despite many departments accepting that minor incidents provide training for major disasters.²

Local immediate care doctors who are familiar with the prehospital environment may be more appropriate for medical incident officers than hospital consultants, who may be unaware of the capabilities of paramedics and the local acute facilities.

It is encouraging that a consultant or senior registrar led the mobile medical team in 38 hospitals, and that 72 included trauma specialists. Whether senior house officers should be team leaders is questionable. Unfortunately, the guidelines do not differentiate between a resuscitation team and a surgical team.

Familiarity with the cramped conditions, bad weather, and the limitations of care outside hospital are more important than specialty or grade. But only 10 teams had any experience at accident sites. Redmond suggested using regional teams so that someone had previous experience of a major incident.³ Local immediate care teams are ignored in most major incident plans.

Arrangements for on site medical services remain inadequate in most hospitals. There seems to be a lack of specific training. Hospitals should consider whether it is more suitable to contract their major incident on site services to a specialist trained group.

1 Department of Health. *Emergency planning in the NHS: health services arrangements for dealing with major incidents*. London: HMSO, 1990. (HC(90)25.)

2 Fisher J. The British association for immediate care. Its experience in major disasters, with special reference to the role of the medical incident officer. *Injury* 1990;21:45-8.

3 Redmond AD. Disaster management. *BMJ* 1989;298:962.

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Tachycardia during cisapride treatment

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Cisapride is a gastrointestinal prokinetic agent that stimulates motility throughout the gastrointestinal tract. It is used for symptomatic treatment of dyspepsia and delayed gastric emptying. The pharmacological basis of its actions is not completely clear, but it probably facilitates acetylcholine release in the myenteric plexus of the gut.¹ Unlike the chemically related agent metoclopramide, cisapride exerts no antidopaminergic or direct cholinergic effect.

Cisapride is generally claimed to have no effect on cardiac rhythm.^{1,2} The product monographs for

cisapride do not include any notice of such an effect in any of the major compendia. However, over the three years from 1989 to 1991 seven reports were submitted to the WHO Programme for International Drug Monitoring in which cisapride was associated with disturbances in heart rhythm. Reports were submitted by the national drug monitoring centres in Australia, Belgium, the Netherlands, and the United Kingdom.

Case reports

Of the seven reports received of cardiac effects related to cisapride, four were of palpitations (with associated chest and arm pain in two patients), one was of tachycardia and hypertension, and two were of extrasystoles (in one (case 3) supraventricular) (table). As may be seen from the table, the male to female ratio was 3:4. Patients' ages ranged from 26 to 69 years, with a mean of 52. The administered dose of cisapride was

Case No	Sex, age (years)	Reaction	Date of onset	Dose (mg/daily)	Duration (days)	Indication*	Other drug treatment	Outcome	Rechallenge
1	F, 57	Severe palpitation, diarrhoea	7.3.90	30	1	Gastro-oesophageal reflux	Glyceryl trinitrate, alginate (Gaviscon)	Recovered	Unknown
2	M, 69	Tachycardia, tremor, hypertension	6.6.91	15	6	Other diseases of oesophagus	Cimetidine	Recovered	Three, all positive
3	M, 62	Supraventricular extrasystoles	14.3.90	15	First day	Gastro-oesophageal reflux	Gliclazide, ranitidine	Recovered	Positive
4	F, 26	Extrasystoles	25.4.90	5	First day	Other hernia abdominal cavity	None stated	Recovered	Positive
5	M, 47	Palpitation, paraesthesia, pain in arm	20.10.89	30	15	Hiatus hernia	Ranitidine	Recovered	Unknown
6	F, 41	Palpitation (normal electrocardiogram)	Unknown	Unknown	Unknown	Functional gastric emptying disorder	None stated	Unknown	Unknown
7	F, 62	Palpitation, chest pain, tremor	27.12.90	10	First day	Reflux	Enalapril, ibuprofen	Recovered	Unknown

*As mentioned in original report from physician.

below or equal to the recommended daily dose of 30 mg in the six cases in which the dose was stated. The occurrence of the heart rhythm disturbance ranged from the first day of drug administration up to the 15th. The indications for prescribing cisapride were compatible with those generally approved. Five of the patients were treated with other drugs before cisapride. None of the other drugs, apart from glyceryl trinitrate and enalapril, which were given as maintenance treatments, have previously been shown to cause tachycardia. Withdrawal of cisapride treatment resulted in complete normalisation of heart rate in the six cases in which information about outcome was given.

Three patients were re-exposed to cisapride, and the symptoms returned. One patient (case 2) was re-challenged on three occasions and experienced tachycardia of 120-130 beats/min for 6-8 hours each time.

Comment

The effects of cisapride on heart rate are not to be expected from the known pharmacology of the drug and seem not to have been previously described in clinical practice. The mechanism by which tachycardia may be induced is not obvious. One explanation could be the structural similarity between cisapride and metoclopramide. Both are structurally related to the antiarrhythmic agent procainamide. Tachycardia has been described with metoclopramide^{3,4} and is known to occur occasionally with procainamide.

In our opinion these seven cases strongly indicate

that cisapride may occasionally induce tachycardia. In three of the patients symptoms recurred upon re-exposure to cisapride. An additional two patients received no treatment other than cisapride. Other confounding factors have not been identified, though one patient (case 4) had had a recent operation for coarctation of the aorta; rechallenge with cisapride after two days, however, resulted in more extrasystoles.

We postulate that cisapride may induce tachycardia through a procainamide-like effect of prolonging the conduction time through the atrioventricular node. Further pharmacological studies are warranted to elucidate the exact effects of cisapride on the heart.

These reports are from several countries belonging to the WHO Collaborating Programme, and the information has been gained and primarily assessed in different ways. Causality thus cannot be simply determined from the information available, and our analysis of the data does not represent the opinion of the World Health Organisation.

- 1 McCallum RW, Prakash C, Campoli-Richards D, Goa KL. Cisapride; a preliminary review of its pharmacodynamic and pharmacokinetic properties, and therapeutic use as a prokinetic agent in gastrointestinal motility disorders. *Drugs* 1988;36:652-81.
- 2 Chéron G, Bernard F, Sallenave JR, Dupont C. Absence d'effet rythmologique du cisapride. *Presse Med* 1991;20:1138.
- 3 Bevacqua B. Supraventricular tachycardia associated with postpartum metoclopramide administration. *Anesthesiology* 1988;68:124-5.
- 4 Shaklai M, Penkhas J, Devires A. Metoclopramide and cardiac arrhythmias. *BMJ* 1974;iii:385.

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ONE HUNDRED YEARS AGO

SEA SICKNESS AND ITS PREVENTION.

SIR,—I have read with great interest Dr. Graily Hewitt's and Dr. Robert Barnes's contributions on the above. As former surgeon in the Royal Mail Steam Packet Company I had many opportunities afforded me of studying and treating this affection, and my experience, however small, may be of some use to those who wish to investigate more thoroughly the cause and means of prevention of this distressing ailment.

Dr. Hewitt quotes from various sources to prove the production of an imitation of sea sickness by visual disturbance. He will find few deny the truth of this, as other causes—such as unpleasant sights and smells—acting in the same way, produce the same effect. But that the exclusion of visual disturbance shall prevent sea sickness is open to grave doubt—at all events, I have found it useless in the treatment of *mal de mer* unless combined with other remedies.

Everyone has doubtless heard of the celebrated case of the Indian rajah who, anxious to attend the Queen's Jubilee in England, and dreading the recurrence of a previous dangerous attack of sea sickness, paid the steamboat company an immense sum of money to construct a "swinging cabin." In spite of all these precautions, though he lay quietly on his back during the

entire trip, he was very ill, as his "swinging cabin" did not prevent the sensation of sinking one experiences when the vessel descends into the trough of the sea. I look on this as a very important factor in the production of sea sickness. Many persons get over the rolling and pitching, but few can at once conquer this. How it acts is open to question. I myself am inclined to think it produces sea sickness reflexly by disturbing the muscular sense. These two causes—namely, visual disturbance and disturbance of the muscular sense—combined with a want of proper relation between the contents of the abdomen and pelvis, are involved in most cases of sea sickness.

The treatment I found most useful was sulphonal to produce sleep and deaden reflex excitability. This should be taken, if possible, immediately on going on board, to be repeated if the sickness becomes distressing. Abstinence from food during the period that the sickness lasts, iced champagne, followed by light clear soups, and the recumbent position are the most useful remedies. Should the patient be greatly prostrated by continued retching, he must be supported by nutrient enemata of brandy and eggs, etc. Nitrite of amyl and chloralamide have been worse than useless in my hands.—I am, etc.

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(*BMJ* 1892;iii:50)