Elderly o/d

A 67 yr old man presents to your department. He has been depressed for some time and has been discovered at home having taken an overdose of theophylline. He has a history of ischaemic heart disease and COPD.

What clinical features might you expect in theophylline overdose? 4 marks

Mild/moderate toxicity:
Nausea, vomiting (which is often severe and resistant to standard antiemetics, epigastric pain, haematemesis and pancreatitis. Tachycardia, tremor, agitation, restlessness, confusion and hallucinations may occur.

Severe toxicity:
Convulsions, hypotension and cardiac arrhythmias such as supraventricular or ventricular tachycardia or ventricular fibrillation may occur. Coma may develop in severe cases.

What metabolic features might you expect? 2 marks

Metabolic features are common and include hypokalaemia (which may be severe), hyperglycaemia, hypophosphataemia, hypomagnesaemia and hypercalcaemia. Metabolic acidosis and respiratory alkalosis may be seen.

The man develops Supraventricular tachycardia. Other than cardioversion, what treatment options are available to you? 4 marks

.Sinus tachycardia or supraventricular tachycardia with an adequate cardiac output is best left untreated. Beta-blockers may be given in severe cases but extreme caution should be used if the patient has asthma or COPD and in these cases a relatively beta-1 specific or short-acting beta-blocker such as metoprolol or esmolol may be considered (see below). Give propranolol 1 mg intravenously (25-50 microgrammes/kg in a child) repeated at 2 minute intervals as required to a maximum of 10 mg. Propranolol may also be effective in treating the metabolic complications (e.g. hypokalaemia) associated with theophylline overdose.

Alternatively metoprolol 5mg slowly intravenously repeated after 5 minutes to maximum of 10-15 mg in an adult or esmolol 50 microgrammes/kg slowly intravenously followed by an infusion of 50-200 microgrammes/kg/min in an adult (300-1000 microgrammes/kg in a child) may be given. These will not correct the metabolic disturbances in the same way as propranolol.

Patients with asthma or COPD who, after correction of hypokalaemia, have supraventricular tachycardias causing haemodynamic compromise should be treated with intravenous verapamil. Alternatively DC cardioversion should be considered.

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