QUESTION 49

An unconscious 50yo man is brought to the emergency department four hours after an intentional overdose of approximately fifty 50mg amitriptyline tablets. He has had a brief convulsion in the ambulance on the way to hospital. An ECG shows a sinus tachycardia with widened QRS complexes of 0.13 seconds. Monitoring shows runs (lasting up to 5 seconds) of a broad complex tachycardia.

He is intubated and transferred to ICU.

The most important initial management is:

A. amiodarone therapy
B. phenytoin therapy
C. bicarbonate therapy
D. lignocaine therapy
E. haemodialysis

TCAs:
- Inhibit reuptake of noradrenaline and serotonin into presynaptic terminals
- Also block cholinergic, histaminergic, alpha1-adrenergic and serotonergic receptors (but not related to therapeutic effects)
- Indicated for major depression, some anxiety disorders, nocturnal enuresis, urge incontinence, pain management, OCD, ADHD and migraine prophylaxis
- Infrequently can cause cardiac arrhythmias at therapeutic doses
- Relative contraindications include prolonged QT syndrome

Amitriptyline Overdose
- Confusion, poor concentration, seizures
- Visual hallucinations
- Drowsiness
- Hypothermia
- Tachycardia, BBB, impaired conduction, CCF
- Dilated pupils
- Convulsions
- Severe hypotension
- Stupor, coma
- Polyradiculopathy
- Agitation, hyperactive reflexes, muscle rigidity, vomiting, hyperpyrexia
- Urinary retention

Sodium bicarbonate is indicated when the QRS interval is >0.10 seconds or the QTc is >0.42 seconds.

Ventricular arrhythmias often respond to phenytoin 15-20 mg/kg (adults) with concurrent systemic alkalization (sodium bicarbonate 0.5-2 mEq/kg I.V.).

Arrhythmias unresponsive to this therapy may respond to lidocaine 1 mg/kg I.V. followed by a titrated infusion.

Physostigmine (1-2 mg slow I.V. for adults or 0.5 mg slow I.V. for children) may be indicated in reversing cardiac arrhythmias that are due to vagal blockade, or for anticholinergic effects, but should only be used as a last measure in life-threatening situations.

Seizures usually respond to diazepam I.V. boluses (5-10 mg for adults up to 30 mg or 0.25-0.4 mg/kg/dose for children up to 10 mg/dose). If seizures are unresponsive or recur, phenytoin or phenobarbital may be required.

Therefore answer is C.