ED QUICK QUIZ

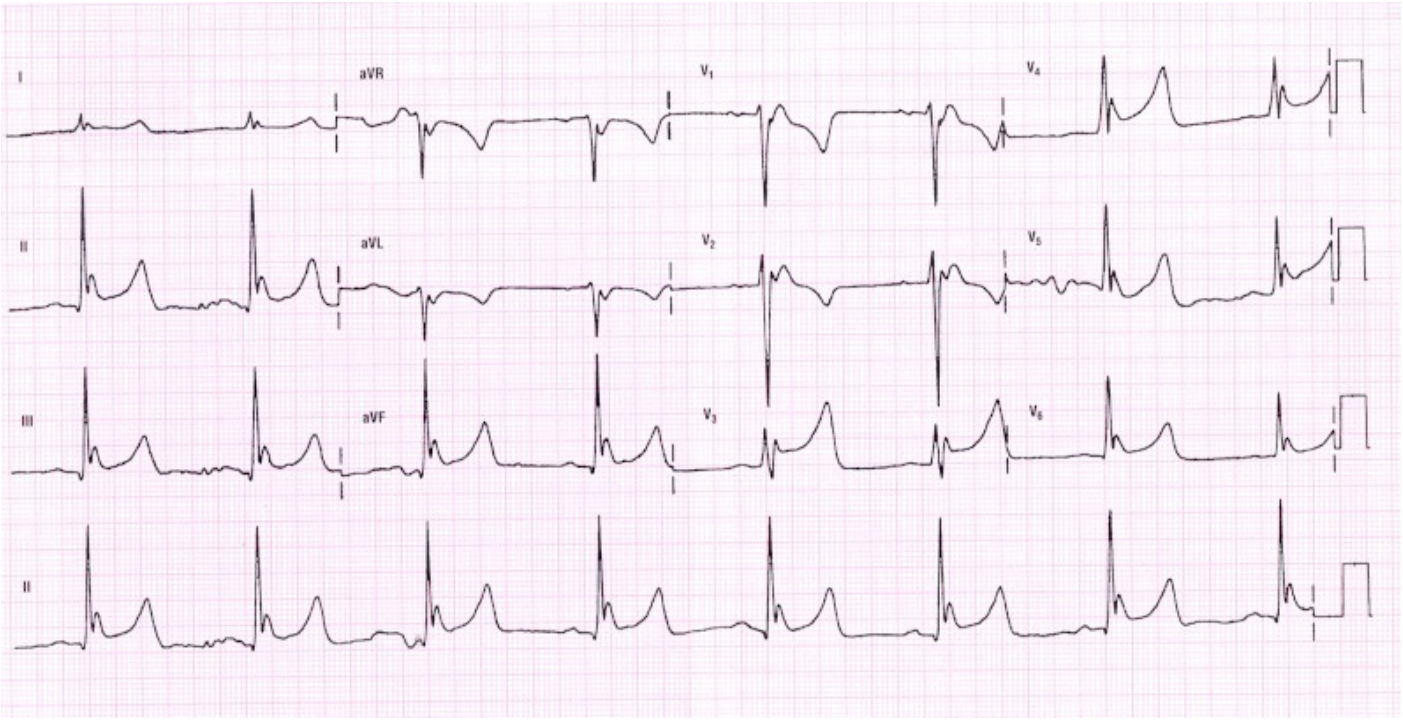
WHAT IS THE DIAGNOSIS?

BACKGROUND

38-year-old male was brought as a standby to the ED with reduced GCS. The patient had been found lying near the entrance of an apartment building. The paramedics were unable to obtain any history from the patient en route.

On arrival, his vital signs were: BP 88/40, HR 38bpm, RR 24 and tympanic temperature 33^{O}C. His oxygen saturation could not be obtained. The patient is dishevelled and looks older than his chronologic age, with a faint smell of alcohol on his breath.

His GCS is E2M5V3. His pupils are equal and reactive to light. There are no obvious signs of head trauma noted. Results of his cardiac examination are notable for marked bradycardia. Lung examination reveals rhonchi in the right lower lung field. The patient's skin is cold, and his blood glucose level is 4 mmol/l. An ECG is performed…



QUESTIONS

1. What in vital sign needs (re)measured and how?
2. What is the diagnosis and treatment?
3. What does the ECG show?

ANSWER & DISCUSSION

1. Vital sign

Temperature – rectally it was measured at 31^{O}C.

2. Diagnosis & Treatment

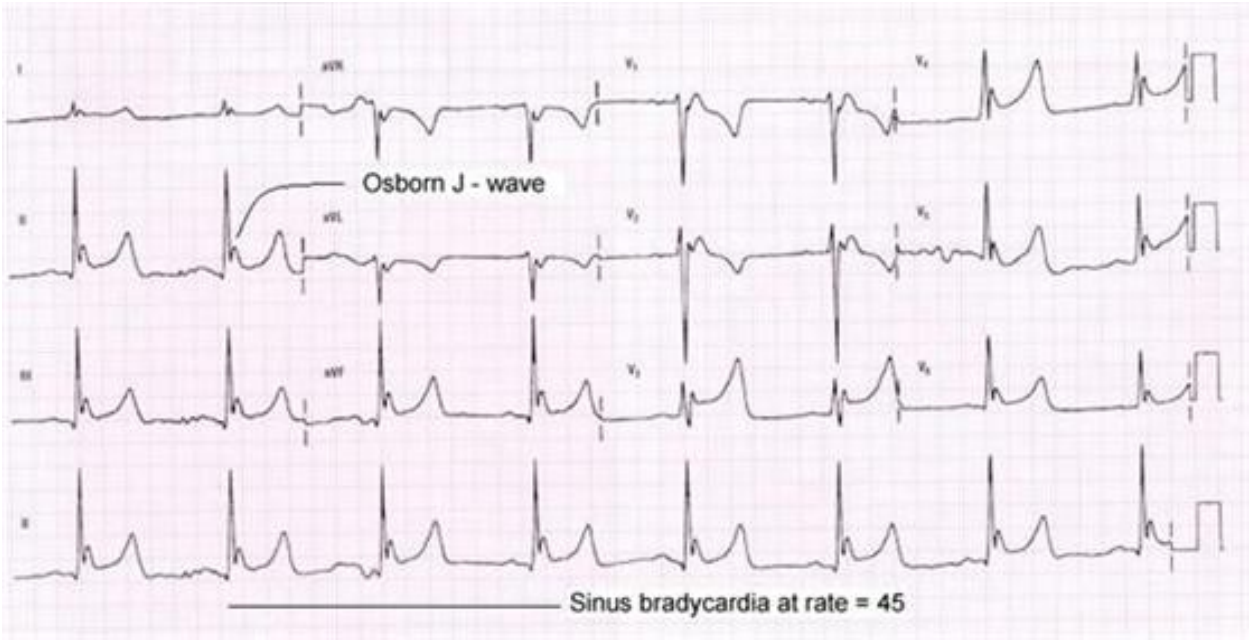
Hypothermia secondary to alcohol use and environmental exposure.

In general, the life-threatening cardiovascular complications of hypothermia are cardiogenic shock and malignant dysrhythmias. Rewarming the patient with warmed IV fluid and other passive and active rewarming techniques is sufficient to restore normal myocardial contractility and cardiac rhythm.

Beware of aggressive IV fluid as it may precipitate pulmonary oedema with the contracted vascular space. The temperature and any acidosis will worsen initially as the cold peripheries "open up". Gentle moving of patients is recommended for concern of precipitating a VF arrest. Prolonged resuscitation would be indicated if this were to occur!

3. ECG

The ECG demonstrates the classic abnormalities associated with hypothermia, the most evident being profound sinus bradycardia. In addition, all leads show classic J-Osborn waves (seen at the junction of the QRS complex and the ST segment).



The ECG must be interpreted within the clinical context; in this case, the apparent elevations of the ST segment should not be misinterpreted as evidence of myocardial injury. Other common ECG findings

associated with hypothermia that are not seen on this tracing include atrial and ventricular dysrhythmias, as well as prolongation of the PR, QRS, and QT intervals.

This case features the most common aetiology of hypothermia (environmental exposure or accidental hypothermia). Other conditions often coexist, such as infection, metabolic abnormalities (eg, hypoglycemia), drug or alcohol overdose, and endocrine problems (eg, hypothyroidism); any one or a combination of these conditions may also be the aetiology.