



Lightning Learning: Cocaine-induced Chest Pain

#EM3

East Midlands Emergency Medicine Educational Media

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STOP!

Cocaine (aka coke, snow, crack or rock) is a strong central nervous system (CNS) stimulant frequently used as a recreational drug. It is commonly snorted, inhaled or injected. **In 2018 it was the second most misused substance among adults in the UK (NHS DIGITAL).** Cocaine stimulates alpha and beta adrenergic receptors resulting in increased myocardial oxygen demand and decreased myocardial perfusion – resulting in chest pain.⁽¹⁾

COCAINE'S EFFECT ON THE CARDIOVASCULAR SYSTEM^(1,2)

- Coronary vasoconstriction/vasospasm
- Tachycardia and hypertension
- Atherosclerotic changes
- Increased platelet aggregation
- Coronary artery aneurysm formation
- Direct damage to the myocyte
- Aortic dissection

DO NOT MISS!

Cocaine-induced bowel ischaemia can also be caused by vasoconstriction related to cocaine use. **Abdo pain is out of proportion to examination findings.**⁽³⁾

LOOK

DIAGNOSIS^(1,2)

- **History:** questions about pain, duration of symptoms, amount taken etc.
- **ECG:** ischaemic changes = admission
- **Cardiac biomarkers:** HS Trop-I, CK
- **CXR:** ruling out other causes of chest pain
- **Observation:** 4 hours post exposure if symptomatic (refer to TOXBASE.org)

If you suspect complications (e.g. *aortic dissection*) request CT aortogram as needed.

TREATMENT⁽²⁾

Any chest pain associated with cocaine usage should be treated as an emergency:

1. Antiplatelet therapy (*Aspirin 300 mg PO*).
2. Benzodiazepines and nitrates (e.g. *Diazepam 10 mg PO*) to relieve chest pain. Consider IV Benzodiazepines if agitated.
3. Coronary angiography +/- stenting, if ST elevation persists after medical treatment. Liaise with cardiology.
4. **Avoid beta-blockers** – risk of unopposed alpha-agonism.

LEARN

FOLLOW UP

Advise cessation of cocaine use. UK patients can also self-refer to social care services like Turning Point.⁽⁴⁾

REFERENCES

1. <http://bit.ly/346DgnO> (*UpToDate*)
2. <http://bit.ly/2Xzn3oN> (*LITFL*)
3. <http://bit.ly/35rCkdR> (*RCEM*)
4. www.turning-point.co.uk



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