ED QUICK QUIZ

WHAT IS THE DIAGNOSIS?

BACKGROUND

A 27 year old man is brought to A&E by his father. He is agitated and confused and his father reports a gradual deterioration over the last week. His father worries that his son's medication, prescribed for schizophrenia, is not working and wants to speak to a psychiatrist urgently.

You have trouble following the patient's thoughts which are fragmented and poorly expressed - there is no meaningful history he can give you.

He has a past medical history of schizophrenia and takes quetiapine.

Examination

He is agitated sweaty and has a coarse tremor. He is confused and has an AMT of 2/4. He is diffusely rigid and is uncooperative with further neurological examination.

His urine is dark brown in colour.

Observations

HR 120, BP 160/100, RR 24, SpO2 94% on room air, Temperature 39.6 degrees, BM 6.5.

QUESTIONS

1. What is your differential diagnosis?
2. Which investigations will help you narrow your differential?
3. A nurse informs you that he is now screaming, and has attempted to attack a member of staff. She asks you to prescribe haloperidol to sedate him. What do you do?
4. How will you treat this patient?

ANSWERS & DISCUSSION

1. Diagnosis

He has **neuroleptic malignant syndrome**, a life threatening emergency caused by antipsychotics. It manifests as **altered mental status**, **muscular rigidity**, **hyperthermia** and **autonomic instability**. Progression is usually agitation -> catatonia -> coma.

Diagnosis is clinical and is supported by a history of antipsychotic use, often with a recent switch in antipsychotic or increase in dose. It is rare and requires a high index of suspicion. However, the **differential** is still wide:

- Sepsis
- Intracranial pathology (eg. encephalomeningitis, intracranial bleed)
- Sympathomimetic intoxication (though rigidity is uncommon)
- Serotonin syndrome (which has added features of D&V, ataxia and myoclonus)
- Anticholinergic syndrome (more likely if recently started antipsychotics)
- Malignant hyperthermia (which usually follows anaesthetics such as suxamethonium)

2. Investigations

Most investigations will be non-specific in NMS, such as elevated WCC, deranged LFTs, hyperkalaemia, AKI and metabolic acidosis. Rhabdomyolysis with high CK and myoglobinuria is seen in NMS but is also caused by serotonin syndrome, sympathomimetics and others.

Sepsis screening by blood culture, CXR and urine dip is vital. Sepsis itself may cause this presentation and infection is a possible trigger of NMS. CT and LP to exclude encephalitis is reasonable – results in NMS are usually normal, though CSF protein can be raised.

3. Sedation: no antipsychotics! Use benzodiazepines instead.

4. Management

Discontinue antipsychotics until at least 2 weeks following resolution of symptoms. Provide supportive management – IV fluids and cooling with paracetamol, ice packs and ice gastric lavage are particularly important. Ensure DVT prophylaxis is given.

The evidence for pharmacological management of NMS is anecdotal, but options include:

- **Dantrolene** (muscle relaxant - reduces heat production and muscle rigidity)
- **Bromocriptine** (dopamine agonist - combats antipsychotic D2 antagonism)
- **Amantadine** (dopamine agonist, anticholinergic)

Treat alternative causes: no one will criticise you for covering sepsis/encephalitis.