

Identify neuroleptic malignant syndrome with FEVER

Neuroleptic malignant syndrome (NMS) is an uncommon but by no means rare side effect of antipsychotics and other dopamine-blocking agents. This life-threatening form of drug-induced hyperthermia can be disastrous if missed, as initial treatment is based squarely on discontinuing the offending agent (*see Malpractice Verdicts, page 92*).

The mnemonic FEVER can help identify clinical and laboratory NMS markers in patients who exhibit mental and neurologic deterioration while taking antipsychotics or dopaminergic antagonists.

Fever. Hyperthermia is often considered NMS' hallmark and distinguishes it from other acute neuropsychiatric disorders. However, recent research suggests hyperthermia may be a late sign of NMS and predicts a fulminant state.¹ Although it is never too late to intervene, do not wait until fever develops to start treatment if you suspect an evolving NMS.

Encephalopathy. Patients may abruptly and unexpectedly become confused, obtunded, and disoriented during early or prodromal NMS stages. Such mental status changes likely result from multiple causative mechanisms in the brain that promote a clouding of consciousness.

Vital sign instability. Autonomic instability symptoms—such as tachycardia, tachypnea, and/or labile blood pressure readings—are common.

Enzyme elevation. Extreme creatinine phosphokinase (CPK) elevations because of rhabdomyolysis

can indicate NMS. Serum CPKs can sometimes be as high as 2,000 times normal.¹ Rhabdomyolysis, caused by muscular rigidity (see below), can help distinguish NMS from other hyperthermic toxidromes such as serotonin syndrome and anticholinergic toxicity.

Rigidity. Generalized muscle rigidity—frequently described as “lead-pipe” in the literature—is an early and easily identified clinical sign.

Although no data clearly substantiate a temporal pattern of NMS, evidence suggests that symptoms progress sequentially. Mental status changes, muscle rigidity, and autonomic instability may appear first, with hyperthermia developing later.² Recognizing the syndrome early and promptly discontinuing the neuroleptic agent can avert a medical crisis.³

References

1. Mann SC, Caroff SN, Keck PE, Lazarus A. *Neuroleptic malignant syndrome and related conditions (2nd ed)*. Washington, DC: American Psychiatric Press, 2003.
2. Velamoor VR, Norman RM, Caroff SN, et al. Progression of symptoms in neuroleptic malignant syndrome. *J Nerv Ment Dis* 1994;182(3):168-73.
3. Christensen RC. Recognition and management of neuroleptic malignant syndrome. *Primary Psychiatry* 2004;11(2):20-31.

Dr. Christensen is associate professor of psychiatry, University of Florida College Medicine, Jacksonville, and director of the university's community psychiatry program.