

Introduction

Serotonin syndrome (SS) is a rare, life-threatening condition that manifests with pyrexia, autonomic hyperactivity, and neuromuscular abnormalities.

Case Description

A 42-year-old woman with alcohol use and major depressive disorder, presented to the emergency department with fever and right sided back pain for two days.

HOME MEDICATIONS:

- ❖ Sertraline 150 mg daily
- ❖ Prazosin 4 mg daily

EXAM: Acute distress, slurred speech, febrile, tachypneic, tachycardic, hypotensive, right costovertebral angle tenderness

INITIAL LABS:

- ❖ Leukocyte count: 16.4, 15% bands
- ❖ BUN/Cr: 68/2.3
- ❖ AST/ALT: 289/124
- ❖ Lactate: 8.3
- ❖ Ethanol level: 512
- ❖ Urinalysis: Leukocyte esterase, Nitrites, 182 leukocytes

INITIAL COURSE:

After vomiting in the ED, she was intubated for airway protection, volume resuscitated with four liters of crystalloid, started on ceftriaxone and transferred to the intensive care unit for treatment of septic shock secondary to suspected pyelonephritis.

References

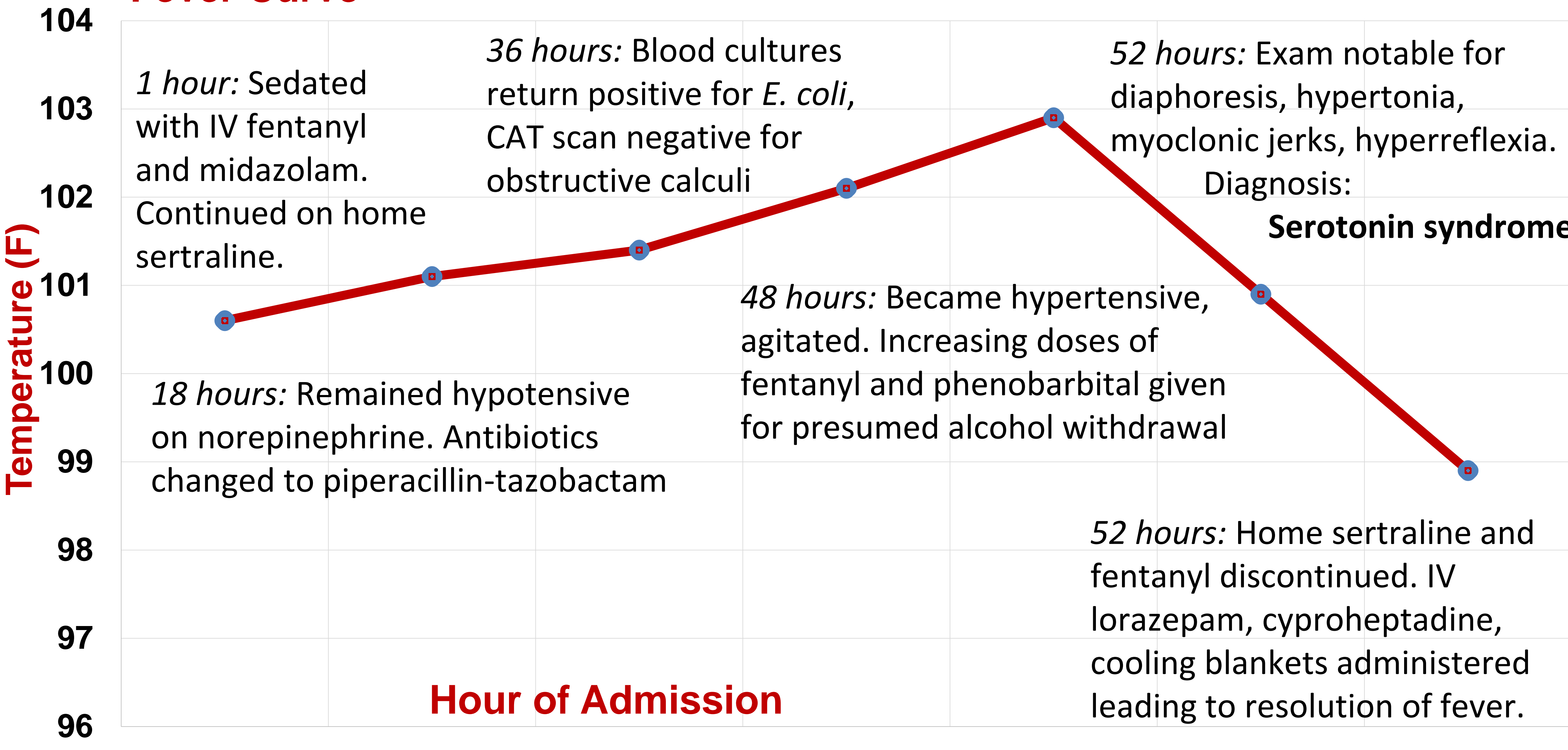
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Clinical Course

Fever Curve



Hour of Admission	Temperature (F)	Clinical Course
1	100.6	1 hour: Sedated with IV fentanyl and midazolam. Continued on home sertraline.
18	101.1	18 hours: Remained hypotensive on norepinephrine. Antibiotics changed to piperacillin-tazobactam
36	101.4	36 hours: Blood cultures return positive for <i>E. coli</i> , CAT scan negative for obstructive calculi
48	102.1	48 hours: Became hypertensive, agitated. Increasing doses of fentanyl and phenobarbital given for presumed alcohol withdrawal
52	102.8	52 hours: Exam notable for diaphoresis, hypertonia, myoclonic jerks, hyperreflexia. Diagnosis: Serotonin syndrome
52	98.8	52 hours: Home sertraline and fentanyl discontinued. IV lorazepam, cyproheptadine, cooling blankets administered leading to resolution of fever.

Discussion

This case illustrates an uncommon but important cause of fever in the ICU, the effects of combined serotonergic agents, and prompt management of SS. Despite ongoing fever, only when the patient displayed hypertonia, hyperreflexia, myoclonus, did we suspect this syndrome. Serotonin syndrome is diagnosed using the Hunter criteria.

Table 1: Hunter Criteria³

Presence of serotonergic agent

- Recent addition
- Increased dose/ overdose
- Interaction

+ meet **ONE** of the following conditions

Spontaneous Clonus

Inducible clonus + Agitation OR Diaphoresis

Ocular clonus + Agitation OR Diaphoresis

Ocular clonus OR Inducible clonus + Hypertonia + Temp >38°C*

Tremor + Hyperreflexia

Medications Implicated in SS

Opioids	Illicit Drugs	Other
•Fentanyl •Meperidine •Tramadol •Codeine •Buprenorphine	•Cocaine •Amphetamine •MDMA •LSD	•Linezolid •Ondansetron •Levodopa •Lithium

Teaching Points

Serotonin syndrome in the ICU often occurs due to continuation of antidepressants plus the addition of opioids (principally fentanyl) and antiemetics.¹

To avoid serotonin syndrome in the ICU, consider pausing antidepressant administration in acutely ill patients and restart them once patients demonstrate recovery from critical illness.²

Optimal management includes discontinuation of serotonergic medications, external cooling, sedation with benzodiazepines, and administration of serotonin antagonists.