

The Use of Emergency Medicine Oral Boards Simulated Sessions to Evaluate Resident Abilities to Diagnose and Manage Serotonin Syndrome

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Introduction

- Little prior research on testing EM physicians-in-training (Residents) for their ability to diagnose and treat uncommon diseases like Serotonin Syndrome (SS).
- Only 15% of physicians were even aware of SS as a diagnosis¹.
- Hypothesis: Majority of Residents are unable to diagnose SS but able to provide appropriate clinical treatment in oral boards simulation cases.

Methods

- We intend to evaluate 76 Residents of all training levels in two training programs.
- Assessment is part of routine practice for EM oral boards. Subjects were blinded to the purpose of the study.
- Each subject is presented with one of three possible cases of SS by two examiners.
- Diagnosis and management were assessed by both examiners simultaneously. Examiners were blinded to each other's assessment.
- Quantitative measurements were made using critical actions predetermined by consensus of local Toxicologists via modified Delphi method.
- Subjects were required to verbalize a final diagnosis for qualitative analysis.
- Results were compared to determine inter-rater reliability.

<i>Level of Training (N)</i>	<i>Serotonin Syndrome</i>	<i>Serotonin Syndrome + Alternate Diagnosis</i>	<i>Incorrect Diagnosis</i>
PGY 1 (7)	0	0	7
PGY 2 (4)	1	1	2
PGY 3 (6)	4	1	1

<i>Level of Training (N)</i>	<i>Medication History</i>	<i>Neurologic Exam</i>	<i>Accurate Temperature</i>	<i>Effective Cooling</i>	<i>Benzodiazepine Use</i>	<i>IV Fluids</i>	<i>Toxicology Consult</i>
PGY 1 (7)	6	0	7	2	2	7	0
PGY 2 (4)	3	2	4	2	2	4	1
PGY 3 (6)	6	3	6	5	3	5	4

Results

- To date, 17 Residents have been evaluated. Results are shown in the tables.
- Examiner assessments revealed significant deficits in understanding the pathophysiology or consideration of medication interaction as a cause of illness.
- No subjects performed dangerous actions.
- Many provided cooling and sedation but some required prompting to initiate these measure or optimize care.

Discussion

- Preliminary results have found that 29% were able to correctly diagnose SS and 41% considered this as part of the diagnosis.
- Senior Residents most commonly made the correct diagnosis.
- Educational efforts should focus on adequate neurologic examinations, effective cooling, and sedative use.
- The mixed methodology of narrative evaluations and objective statements offer the opportunity to more precisely focus training towards the management of SS.

- This model may prove useful for assessment of other illnesses.

References

- 1) Mackay FJ, Dunn NR, Mann RD. Antidepressants and the serotonin syndrome in general practice. Br J Gen Pract. 1999;49(448):871-4.