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# Utilizing an Audience Response System to Teach Countertransference to Pediatric Residents

Lianna Karp, M.D., Cordelia Ross, M.D., M.S., Philip B. Cawkwell, M.D.

Resident psychiatrists have a unique trainee environment compared with residents in other medical training programs. In psychiatry training programs, the use of self-reflection to recognize and manage countertransference reactions is an expected aspect of the curriculum (1), while there are fewer opportunities for self-reflection in other medical specialties (2, 3). Countertransference can be defined as feelings, conscious or unconscious, about the patient that may be underrecognized by the physician or student; these feelings naturally occur in each of us and “do not signify that something is wrong with the doctor” (4). Recognizing when countertransference occurs and skillfully using this knowledge in one’s clinical work is considered a key to clinical competence for psychiatrists (3), because countertransference helps us to diagnose and assess patients, guides our interventions and treatment, and helps us to learn more about ourselves as clinicians (5). It has also been hypothesized that physicians from other specialties could benefit from this knowledge (6), with evidence suggesting that it could help physicians better recognize errors, improve decision making, and resolve conflict (7).

To bridge the self-reflection gap between the psychiatric community and other medical communities, we developed a novel workshop to teach countertransference to pediatric residents. The model relied on an audience response system as a mechanism to encourage participation around an emotionally charged topic. An audience response system allows groups to vote on a topic or answer a question, with the option of making anonymized answers available to the audience in real time. We hypothesized that a nonpsychiatric training program would

benefit from the anonymity and collaboration conferred by this system.

There is a small but increasing literature on the role of the audience response system in medical education. In one study, radiology residents who were taught with an audience response system demonstrated better comprehension of the material and better retention at a 3-month follow-up compared with residents who were taught with didactic lectures. Additionally, residents indicated a strong preference for teaching that integrated the system (8). Incorporating an audience response system into preparation for the Psychiatry Resident-In-Training Examination led to success both in terms of increasing scores and with regard to subjective reporting of enjoying this method of teaching compared with traditional methods (9). Overall, audience response systems have been shown to increase learner engagement and participation, although findings showing increased knowledge-retention are inconsistent (10).

## METHODS

We were invited to present on the topic of countertransference at a lunchtime conference for pediatric residents. On the basis of informal count and tabulated audience response system responses, approximately 20 individuals were in attendance. This included medical students, interns, residents, and one attending physician. In this study, we utilized Poll Everywhere, a web-based audience response system that allows for anonymous audience response via text message or the web, with real-time response aggregation.

We began the didactic with a task designed to demonstrate the functionality

of the audience response system to the audience, to show that responses would be anonymous, and to emotionally prime the audience. This first task asked the audience to rate their present mood using a scale of different cartoon emoticon faces. The next task was free-response, asking the audience to describe their emotional response to two different pictures of a puppy (the first happy, the second sad). The responses generated are summarized in Table 1.

Next, we flashed an array of words and acronyms on the screen: “Chronic Lyme,” “ARFID” (avoidant/restrictive food intake disorder), “PANDAS” (pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections), “POTS” (postural orthostatic tachycardia syndrome), “SI” (suicidal ideation), and “Psych boarder,” and we asked the audience to text the emotions that they generated. These phrases were chosen to provoke emotional reactions, because patients and families who hear these words often present unique challenges and require extra clinical time. As shown in Table 1, this generated significant negative emotions. At this time, participants were asked to verbally elaborate on their experiences working with “difficult” patients and families, and a group discussion ensued.

We then presented the case of a teenager with a history of chronic Lyme disease, formerly diagnosed as PANDAS, who presented with acute and chronic abdominal pain, nausea, vomiting, and poor oral intake. We asked the audience several questions via the audience response system regarding how they would feel about being involved in the care of this patient. As presented in Table 1, their responses were fairly homogenous, demonstrating frustration with the patient’s

**Table 1. Audience response system results**

Prompt	Participant responses
What are the first words that come to mind when you see [happy dog image displayed on screen]?	Happy; cute; :D; adorable; awww; puppy!!!; fun
What are the first words that come to mind when you see [sad/wet dog image displayed on screen]?	Lonely; soggy; sad; poor guy; I love him
What are the first words that come to mind when you see [psychiatric terms displayed on screen]?	Ugh; lazy; oyyyy; noo; ughhhh; ugg; sad; NG tube; ohno; noooo; yikes; no; fake; tough; why?; annoying; avoid room; irritating; ABSOLUTELYNOT; aww man; nervous; frustrated; complicated
How would you feel if you were the intern/resident assigned to this patient?	This isn't going to be productive; :/. Lyme literacy what are you; angry at outside physicians; maybe she has POTS; ugghhhh; frustrating; OMG; por kid; parent issues; frustrated at her doctor; psych issues; why me?; frustrated; malpractice; overwhelming; not me; dread; why me?
How would a case like this affect your identity as a physician?	Worried that I might be missing something; feeling like I am just here to [discharge] patients not help them; helpless; what good are we doing?; feel guilty because it is harder to be empathetic; highlights our limits; powerless to stop a runaway train; more struggle with guilt and feeling bad for having less sympathy; feeling undermined or undervalued; helpless, hopeless
How does caring for a challenging patient/family [affect] your life outside of the hospital?	Adds to stress and self-doubt; get home in a bad mood; tired and cranky; it makes it hard to interact with acquaintances who have similar antisocial/medicine beliefs; grateful for my health; felt bad for the interns; keeps me up at night; tired; what is life outside the hospital?; I am [unable to] compartmentalize very much; need more beers in my fridge

multitude of vague and subjective symptoms, anger toward other clinicians, and even dread at the prospect of caring for the patient. We asked questions to elicit how challenging patient cases affect a resident's identity. The responses focused on negative self-talk and feelings of inadequacy and guilt (see Table 1). In addition, we asked questions to elicit ways in which difficult cases affect residents' lives outside of the hospital, when they return home from work. As shown in Table 1, responses varied: some residents reported good ability to compartmentalize between home and work, others used humor to cope, while others noted a direct negative impact on their home life.

In the next portion of the workshop, the audience was asked to rate their confidence in accurately defining countertransference and to respond to the question, "Can you define countertransference?" None of the participants responded "yes," eight reported "somewhat," and five reported "not at all." We then offered a broad definition of countertransference as the sum of their feelings toward a patient, discussed specific nuances about what this means, and reviewed the potential benefits of acknowledging and understanding residents' feelings about patients.

Lastly, we asked participants to consider the impact that an awareness of countertransference might have on their clinical care. Strategies to improve patient care, after acknowledging countertransference toward a patient, were brainstormed among participants as a group, with participants offering ideas that included practicing mindfulness prior to entering patients' rooms, debriefing with other team members when angry or upset, and sharing the burden of challenging conversations among various team members.

## RESULTS

To gauge the impact of this workshop, we devised a postworkshop anonymous questionnaire that assessed learner satisfaction and learning objectives. We obtained 17 completed surveys, and all course evaluation comments were positive and indicated improved awareness of and appreciation for the subject matter. Results of our postworkshop survey (see Table 2) indicated significantly improved confidence in defining countertransference. Additionally, participants reported an increase in their level of comfort working with challenging patients and families because of their participation in the workshop.

In terms of the open-ended feedback (Table 2), all submitted comments were positive and commended various aspects of the curriculum. Four respondents specifically referenced the audience response system as being a positive addition to the experience. Others indicated that it was "good to know [that] other people feel the same [way they do]" and that the workshop "was great, especially for interns this time of year."

## DISCUSSION

Overall, the workshop feedback supported the idea that the psychiatric principle of countertransference was an undertaught and underutilized resource for trainees in nonpsychiatric specialties. The emotional depth of the responses, in addition to the praise received in the feedback, indicates that use of an audience response system deepened discussion of sensitive subject matters and helped to create the space for increased emotional vulnerability among participants. By providing an opportunity for participants to share negative countertransference reactions toward patients, our aim was to demonstrate that the normalization of these emotions and

**Table 2. Responses to postworkshop questionnaire**

Prompt	Participant responses
Can you define countertransference?	Not at all, N=0 Somewhat, N=4 Yes, N=13
On a scale of 1–5, has your comfort working with difficult patients/families improved with this lecture?	Not at all, N=0 N=1 <sup>a</sup> Somewhat, N=8 N=6 <sup>a</sup> Very much, N=2
Would you recommend this lecture to your peers?	No, N=0 Maybe, N=2 Yes, N=15
Do you have any open-ended feedback about this session?	"Liked the poll everywhere." "Always good to know other people feel the same as me." "Liked the poll (open-ended)." "Loved the content and interactive piece." "Loved the polls." "Polls were nice to get in the sharing mood." "I think this was great, especially for interns this time of year." "Loved the interaction."
What is one thing you took away from this talk?	Tips for how to not let yourself get overwhelmed; okay to vent; setting limits; many people share the same negative feelings about patients; countertransference; definition of countertransference; skills venting; self-awareness in working with difficult families; great use of real-time surveys; how to deal with difficult situations with patients and families; good prep strategies before going into the room
How does caring for a challenging patient/family [affect] your life outside of the hospital?	Adds to stress and self-doubt; get home in a bad mood; tired and cranky; it makes it hard to interact with acquaintances who have similar antisocial/medicine beliefs; grateful for my health; felt bad for the interns; keeps me up at night; tired; what is life outside the hospital?; I am [unable to] compartmentalize very much; need more beers in my fridge

<sup>a</sup> On the 5-point scale, points 2 and 4 represent in-between options.

subsequent potential reduction of shame would reduce their propensity to unconsciously act on these thoughts by, for example, decreasing time spent with or avoiding particular patients or families, becoming outwardly angry or frustrated, allowing negative feelings to impair clinical judgment, or developing feelings of helplessness or incompetence, all of which further contribute to burnout. Learners also expressed gratitude for the skill-based nature of the workshop, validating the decision to include practical tips for what to do with countertransference reactions.

One limitation of this study was time constraint—with more time for discussion, responses may have been more varied or in depth. Another limitation was that participants comprised a small group of individuals who personally knew some of the presenters, which may have fostered comfort. On the other hand, some participants might have been

less likely to be open about negative feelings with closer colleagues. Likewise, the small group format may have made participants feel intimidated and unwilling to engage fully. Furthermore, given the time of the presentation during the lunch hour, some audience members came and went freely over the course of the presentation, which may have been disruptive for some participants. Finally, the concept of being a pediatrician not wanting to help or feeling frustrated by a sick child introduces compli-

cated and possibly conflicting emotions that may remain unconscious for some individuals.

The feedback that we received from participants in this workshop session indicated that this was a well-received exercise that most of the participants would recommend to others. We feel that most trainees across a wide spectrum of specialties would benefit from understanding and processing their countertransference. In addition, we believe that this was a successful application of an audi-

#### KEY POINTS/CLINICAL PEARLS

- Audience response systems are technologic tools that allow groups to answer questions and view anonymized answers available to the audience in real-time.
- The concept of countertransference was not well understood in the small sample of one nonpsychiatric residency program.
- This pilot study demonstrated that an audience response system can be used to successfully promote engagement, create a space for vulnerability, and effectively teach trainees.

ence response system, and our findings suggest that such system should be used when teaching similar therapeutic principles in the future, such as enhancing learner self-compassion, destigmatizing burnout among practitioners, and sharing defensive reactions to feedback.

Drs. Karp, Ross, and Cawkwell are all third-year residents in the Department of Psychiatry at Massachusetts General Hospital, Boston, and McLean Hospital, Belmont, Mass.

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**We thank all those who submitted CVs.**

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# The Opportunity of Tragedy

Richard Hadi, D.O.

“He was one of my heroes too.”

It is a strange feeling when you and a patient share a moment of unexpected silence over the death of a person neither has met. That person was Anthony Bourdain.

And yet, there we sat across from one another, not only as a doctor to a patient but as two fans of a fallen role model. Over the next couple of days, I thought about his suicide, and one question repeated itself in my mind, “Why did he not get help?”

Unfortunately, failing to seek treatment is a common narrative for people whose mental illness results in death. Suicide ranks as the 10th leading cause of mortality in the United States, according to the Centers for Disease Control and Prevention (1). Even more disturbing is that among persons ages 10–34, suicide climbs to the second leading cause of death (1). Negative attitudes and beliefs continue to motivate individuals to fear, reject, avoid, and discriminate against those with mental illness in our society (2). These processes have kept conversations about wellness silent and away from the limelight. However, when celebrities die by suicide, the public is forced to take notice and to understand that even a larger-than-life individual is innately human and mortal. Although tragic, the recent deaths of Bourdain, Robin Williams, and Avicii afford us a unique and compelling opportunity—a chance to discuss mental health openly and without stigma.

**It was Bourdain’s death that gave him the wake-up call he needed to address his depression and seek treatment.**

Although concrete data on successful interventions after a celebrity suicide are limited, studies have shown an increase in interest in mental health and treatment by the general public (3). As physicians, we should take this opportunity to normalize conversations about mental health and reemphasize the importance of psychiatric care with our patients. In fact, research on antistigma interventions emphasizes that doctors, in particular, are exceptionally suited and uniquely positioned to provide necessary psychoeducation that destigmatizes mental illness (4). Part of that education process can begin when we help our patients understand the severity of the current epidemic of mental illness. Many of my patients are shocked to learn that not only are nearly 20% of persons in the United States—44.7 million people—affected by mental illness but also that, in terms of mortality, suicide outranks a condition as widely recognized as sepsis by a significant margin (5). By increasing awareness of the prevalence and acuity of mental disorders among our patients,

we can begin to reverse the stigma of mental disorders and bridge the gap between patients and adequate care.

My patient later acknowledged that it was Bourdain’s death that gave him the wake-up call he needed to address his depression and seek treatment. Although his outcome was positive, the truth remains that stigma continues to hinder people from seeking help. Physicians have an important role in creating change. Without a doubt, it will be difficult and will take time, but change starts simply by having the courage to be an advocate and acting on our desire to heal.

Dr. Hadi is a second-year resident in the Department of Psychiatry, Rowan University School of Osteopathic Medicine/Jefferson Health, Mount Laurel, N.J.

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# Who's the Worst Intern? Using Life Experience to Practice Empathy With Patients

Jonathan Miller, M.D.

We are now 9 months into the intern year, and everyone wants to know who's the worst intern? Spoiler alert. I am. Well, at least that's the opinion of one of my attendings. I can't blame him. It was an awful 5-day rotation that culminated with my supervisor delivering this heartbreaking statement, "You're falling behind your peers."

At this moment, I felt that I was at my absolute worst. But it made me think, How many of my patients come in to see me at their absolute worst? At a time when they too are their most dysfunctional.

I consider myself lucky. For me, this rotation wasn't my first time feeling at my worst. As a medical student from a minority group, I had a tenuous path into the field of psychiatry. People have mistaken me for hospital kitchen or cleaning staff. Once, while leaving the hospital, I was mistaken for a criminal and arrested and jailed. I've endured thousands of patient comments regarding my race. I've felt at my worst plenty of times.

My patients often aren't so lucky. For some, this is the first time they have ever been singled out for "bad genetics" or the first time they have been deemed unfit,

I don't know what it feels like to have a mental disorder, but I do know what it feels like to be treated differently based on genetics.

simply because they were having a bad day, a bad week, or a bad few months.

I recall sharing my experiences with several of my mentors. They suggested some great books to read. One that comes to mind is *Black Man in a White Coat*, by Damon Tweedy. I was told that this book is about a person just like me who is navigating similar adversities. I was told it would give me further insight into "my situation." I never read it. When I think back to this time, I realize that I hadn't wanted further insight. I simply wanted someone to listen.

We too tell our patients that we have a great book called DSM. We tell them,

"It's a book that is full of people like [them] who are going through similar things as [them]." Then we print out handouts to help them gain insight into "their situation." The DSM and *Black Man in a White Coat* are both great resources, but without attentive listening, they are ineffective tools. Intellectualization isn't a universal defense mechanism, but following the Maslow model, empathy and belonging are crucial to reaching self-actualization.

I don't know what it feels like to have a mental disorder, but I do know what it feels like to be treated differently based on genetics. I know what it feels like to be incarcerated. And, most importantly, I know what it feels like to be at my absolute worst. I imagine that my needs and those of my patients are similar in these instances. When I'm at my worst, empathy is what I find most helpful—a reminder of my personal value, that the person I am today is not the person I will always be. I think my patients would agree.

Dr. Miller is a first-year resident in the Department of Psychiatry, Wright State University, Kettering, Ohio.

# Association of Thyrotoxicosis With Mania

Afifa Adiba, M.D.

Here I present a case of a young woman who was admitted to the hospital with a first manic episode and found to have thyrotoxicosis. The purpose of this case report is to focus attention on the possibility of mania presenting as a manifestation of other medical conditions, such as excess thyroid hormone.

## CASE

"Ms. F," a 24-year-old female with no known medical history, was brought to the emergency department by emergency medical services for agitation and disorganized behavior. On the way to the hospital, she was given 10 mg of haloperidol, 4 mg of lorazepam, and 50 mg of diphenhydramine intramuscularly. Ms. F reported that she was "chosen by God" and "haunted by demons." For more than 2 weeks, she had been sleeping 2–3 hours at night and experiencing hyperreligiosity. She stated that was reading the Bible more than usual, speaking in tongues, and crying for her past sins.

A review of systems was significant for weight loss, anxiety, emotional lability, alternating bouts of diarrhea and constipation, and heat intolerance for the past few weeks.

She reported no family history of mood disorders; however, she reported thyroid disease in her grandmother. Physical examination was significant for tachycardia, temperature 99.1° F (37.3°C), and fine tremors in her bilateral upper extremities. There was no observable proptosis. Thyroid was nontender and without palpable abnormality. Skin was dry, and non-pitting edema was observed in her lower extremities. Her physical and neurological exams were otherwise unremarkable.

Ms. F was alert and oriented to person, place, and time. She was well-groomed and in appropriate dress. She was cooperative, but psychomotor agi-

tation was noted as she was constantly rocking back and forth. Her speech was pressured. She described her mood as "great," and her affect was labile. She denied suicidal and homicidal ideation. Her thought process was notable for circumstantiality, looseness of association, and delusions of grandiosity. No paranoia or ideas of reference were apparent. She denied hallucinations and did not appear to be responding to internal stimuli. Ms. F was easily distractible, with a short span of attention. Her memory was intact. Insight and judgment were impaired.

Complete blood count, basic metabolic panel, and antinuclear antibody were ordered to rule out infection or autoimmune disorder and found to be unremarkable. Urine pregnancy and toxicology studies were also unremarkable. Electrocardiogram showed normal sinus tachycardia. Thyroid function testing was ordered given the patient's presentation (Table 1).

Endocrinology was consulted, and those clinicians noted no history of radiation and thyroid-toxic medication exposure, including amiodarone and lithium. Because the patient's thyroid-stimulating hormone (TSH) was low, with elevated free triiodothyronine (T3) and thyroxine (T4) and positive thyrotropin receptor antibody, Ms. F was diagnosed as having thyrotoxicosis without thyroid storm, possibly due to Graves' disease. Endocrinology recommended initiating methimazole 10 mg twice daily and propranolol 60 mg four times daily for heart rate control. The endocrinology clinicians did not feel that a medical inpatient admission would be beneficial, because her vital signs were stable and she did not require fluids, telemetry, or monitoring for autonomic instability.

Ms. F was admitted to the psychiatry inpatient unit with a diagnosis of bipolar and related disorder due to another

medical condition. In the unit, she continued to experience elevated energy with decreased need for sleep. She displayed flight of ideas, tangentiality, grandiosity, hyperreligiosity, and delusional thinking. Her affect remained labile. The emergency psychiatric physician had initially prescribed 40 mg of lurasidone daily with breakfast. Because of a lack of therapeutic response, lurasidone was discontinued 3 days after hospital admission.

The patient's manic symptoms were then targeted with a combination of risperidone and lamotrigine. Risperidone 2 mg nightly and lamotrigine 25 mg daily were initiated together as a means of both acute symptom management and subsequent maintenance. She developed a rash, which led to discontinuation of lamotrigine. She was then prescribed divalproex sodium 1,500 mg daily (weight-adjusted dose), because lithium was an additional risk to her thyroid health. During hospitalization, risperidone was titrated to 4 mg nightly, and divalproex sodium was increased to 2,000 mg to achieve symptom management. She developed sialorrhea from risperidone and was cross-tapered to quetiapine 200 mg every morning and 400 mg nightly because this medication is less likely to cause sialorrhea. Ms. F tolerated quetiapine and divalproex sodium without any significant side effect.

After 12 days of inpatient treatment, follow-up labs showed that TSH was 0.01, free T3 had come down to 593, and T4 had decreased to 2.93. These results indicated a response to antithyroid medication. After 20 days of hospitalization, Ms. F was discharged on quetiapine 200 mg every morning and 400 mg nightly, divalproex sodium 2,000 mg daily, methimazole 10 mg twice daily, and propranolol 60 mg four times daily. At the time of discharge, her sleep was im-



proved, mood was euthymic, affect was appropriate to mood, and delusion was resolved. Two days after discharge, her follow-up labs revealed that the free T3 had come down to 320 and the free T4 to 0.963—both within normal range.

## DISCUSSION

It is well accepted that disturbances in thyroid metabolism in a mature brain may significantly alter mental function, influencing cognition and emotion (1). From earliest reports to the present day, the strongest association between thyroid dysfunction and psychopathology has been in the area of mood disorders (2). Patients with thyroid disease, especially primary hypothyroidism, often have depressive symptoms. Conversely, many patients with affective disorders have noticeable abnormalities in the hypothalamic-pituitary-thyroid axis (3).

In psychiatric practice, obtaining thyroid function tests for patients newly diagnosed with depression is often routine. Although the association of depression with hypothyroidism has been well studied, the relationship between manic symptoms and hyperthyroidism remains incompletely understood.

Thyrotoxicosis—an excess of thyroid hormones in the bloodstream—is characterized by anxiety, fatigue, generalized weakness, insomnia, weight loss despite increased appetite, tremulousness, palpitations, and increased perspiration. Serious psychiatric symptoms include manic excitement, delusions, and hallucinations (4). According to DSM-5, mania is a distinct period of abnormally and persistently elevated, expansive, or irritable mood lasting at least a week and, during that period of mood disturbance, of increased goal-directed activity or energy, inflated self-esteem or grandiosity, decreased need for sleep, more talkative or pressured speech, distractibility, and flight of ideas. The episode is not due to the physiological effects of substances or any other medical condition (5).

In terms of pathophysiology, TSH stimulates the thyroid gland to produce T4 and T3. The production and secretion of TSH is regulated by the hypothalamus via thyrotropin-releasing hormone. TSH production is inhibited via a negative

**TABLE 1. Thyroid function test results for the case patient**

Test	Normal range	Result
Thyroid-stimulating hormone	0.27–4.20 mIU/ml	0.01 mIU/ml (low)
Free triiodothyronine	200–440 pg/dl	1,983 pg/dl (high)
Free thyroxine	0.930–1.70 ng/dl	5.590 ng/dl (high)
Thyroid peroxidase antibody	≤5.61 IU/ml	<3.00 IU/ml
Antithyroglobulin antibody	≤4.11 IU/ml	3.47 IU/ml
Thyrotropin receptor antibody	0.0–1.75 IU/L	11 IU/L (high)

feedback loop by T3 and T4 (4). Thyrotoxicosis in Graves' disease is caused by autoantibodies to the thyrotropin receptor that activate the receptor, thereby stimulating thyroid hormone synthesis and by negative feedback lowering the TSH hormone (6).

In our case, Ms. F experienced physical symptoms of hyperthyroidism, such as tachycardia, fine tremors, and dry skin, with concomitant manic symptoms—elevated mood, grandiosity, pressured speech, distractibility and increased energy. It is unclear whether the resolution of the patient's manic symptoms occurred from the treatment of thyrotoxicosis or the treatment of mania, because both conditions were treated concurrently.

The literature notes that thyroid diseases can trigger psychiatric illness (anxiety, depression, mania and psychosis) (7). Our case raises the question as to whether the patient's manic episode was a manifestation of her thyroid dysfunction. Manic symptoms have been known to occur with hyperthyroidism but are rare (8). In hyperthyroidism, late-onset mania is more commonly detected than early-onset mania (9).

A retrospective review based on 18 patients described manic symptoms oc-

curing shortly after the initiation of thyroid replacement in patients with hypothyroidism (10). Most of the patients experiencing mania were female; they often had concurrent psychotic symptoms and frequently had a personal or familial history of psychiatric disorders. The authors suggested that rapid administration of thyroxine could abruptly augment catecholamine receptor sensitivity, thereby causing manic symptoms. Another study suggested that the modulation by thyroid hormones of the B-adrenergic receptor response to catecholamines may contribute to the affective changes seen in thyroid disease (11).

Although there are no well-established guidelines for treatment of mania associated with thyrotoxicosis, some studies suggest that patients with this condition should first be treated by restoring them to euthyroid states (1, 7). Additional treatment with beta-adrenergic antagonists is also helpful. Antimanic agents are required when symptoms fail to respond to these measures (8). Several studies have investigated the timeline of symptoms resolution and found that symptoms tend to disappear with successful treatment (12). Wallace et al. (13) stated that the effects of hyperthyroid-

## KEY POINTS/CLINICAL PEARLS

- It is imperative to both consider and exclude medical conditions that have direct pathophysiological consequences in psychiatric conditions.
- Thyroid disease can worsen or cause a variety of psychiatric symptoms, and thyrotoxicosis due to Graves' disease can mimic the signs and symptoms of mania.
- Treatment of underlying organic disorder (when found) is recommended in management of psychiatric illness; however, it may be necessary to also utilize psychiatric medications to minimize concomitant symptoms.
- Lithium should be avoided for patients with thyroid abnormalities, especially in mania associated with thyrotoxicosis.

ism on the brain return to normal more slowly than other systemic effects. Prospective studies of patients with hyperthyroidism suggest that remission of affective and cognitive symptoms usually occurs within a few months of patients' becoming euthyroid. Some studies suggest that an episode of hyperthyroidism influences affective modulation in a time frame that exceeds the period of thyroid hormone excess (1). Cross-sectional studies suggest that there may be long-term effects on cognitive function and affective modulation following hyperthyroidism (7).

## CONCLUSIONS

A link between thyrotoxicosis and mania could consist of a direct comorbidity between the disorders and similarities in presentation. Alternatively, manic symptoms may gradually develop in the wake of thyroid hormone excess. Future research is warranted to elucidate the relationship of affective disorders to central thyroid hormone functioning and pathological processes involved. Such research should also be aimed at developing clear treatment guidelines, which

will lead to a more specific approach in the management of patients with this type of presentation.

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The author thanks her attending, Dr. Jon Corey Jackson, Clinical Psychiatrist at Mississippi State Hospital, Pearl, Miss., and Adjunct Professor, Department of Neural and Behavioral Science, William Carey University College of Osteopathic Medicine, Hattiesburg, Miss., for his assistance.

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## Residents' Resources

Here we highlight upcoming national opportunities for medical students and trainees to be recognized for their hard work, dedication, and scholarship.

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Fellowship/Award	Transgender Psychiatry Fellowship
Organization	Mount Sinai's Institute for Advanced Medicine
Deadline	<b>July 1, 2019</b>
Brief Description	This is a paid (\$76,148 + conference/travel expenses) 1-year opportunity to work at the Center for Transgender Medicine and Surgery (CTMS) under the supervision of leading experts in transgender psychiatry. CTMS is located in the heart of New York City (Chelsea) and is a fully integrated clinic with medical, psychiatric, and surgical services provided. Available services include pastoral care, social work, and legal aid, all of which are tailored to transgender and gender nonconforming individuals.
Eligibility	Candidates must have completed a general psychiatry residency, have or be able to obtain a New York State license, and be board-eligible. Competency in LGBT-related mental health is desirable.
Contact and Website	<b>Web:</b> <a href="http://icahn.mssm.edu/education/residencies-fellowships/list/transgender-psychiatry-fellowship">http://icahn.mssm.edu/education/residencies-fellowships/list/transgender-psychiatry-fellowship</a>
Fellowship/Award	Academy of Consultation-Liaison Psychiatry (ACLP) Trainee Travel Award
Organization	ACLP
Deadline	<b>July 1, 2019</b>
Brief Description	To encourage psychosomatic fellows, residents, and medical students to join ACLP and attend the annual meeting. A limited number of monetary awards are given to offset the cost of attending the annual meeting. (ACLP Council determines the dollar amount and number of awards.)
Eligibility	PGY-3 psychiatry resident or psychosomatic fellow.
Contact and Website	<b>Web:</b> <a href="https://www.clpsychiatry.org/about-aclp/awards/trai-trav">https://www.clpsychiatry.org/about-aclp/awards/trai-trav</a>

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