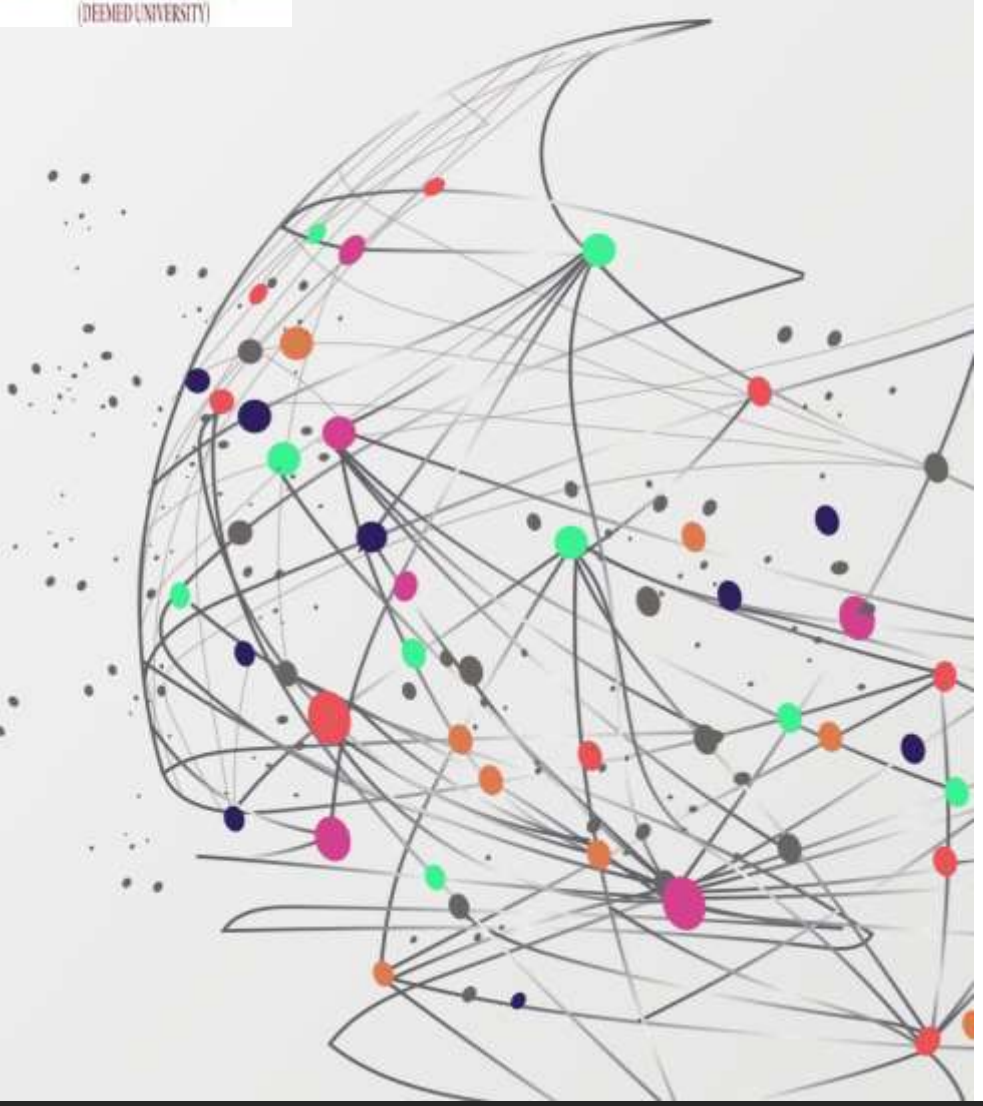


CASE SERIES ON MANIA IN HYPERTHYROIDISM

DR ALICIA PERTI

INTRODUCTION

- Hyperthyroidism- excess production & release of thyroid hormone resulting in inappropriately high serum levels. Most common causes are **Grave's disease**, **toxic multinodular goitre**, **toxic adenoma.**
- Thyrotoxicosis- hypermetabolic state that results in excessive amounts of circulating thyroid hormone but includes extrathyroidal sources of thyroid hormone for eg, exogenous intake. Frequent cause is **thyroiditis.**
- Thyrotoxicosis could vary from subclinical presentation to thyroid storm.

CASE HISTORY

CASE 1 : 20 y/o F	**CASE 2 : 39 y/o F**	**CASE 3 : 48 y/o M**
• Irritability • Easy distractibilty • Overtalkativeness, over religiosity • Decreased sleep & increased appetite ∵ 1 month, ↑ over 10-15 days Being pressurised to get married.	• Irritabilty & abusive behavior • Overfamiliarity, big talks • Authoritative behavior • Decreased sleep, increased appetite (∵ 3 months, ↑ 2 weeks) Gen weakness & weight loss ∵ 1 year. In the background of stressors over property settlement.	• Irritability • Hyperactivity and aggressive behavior • Big talks • Authoritative behavior ∵ 4 months, ↑ over 1 week. Professional stressors + at his workplace.

PAST HISTORY

- None of the cases had any episodes of similar symptoms in the past.
- No H/O head injury/seizures
- Not K/C/O endocrine disorders.

FAMILY HISTORY

- Only case 2 – father was a K/C/O hyperthyroidism on irregular treatment.

PHYSICAL AND SYSTEMIC EXAMINATION

CASE 1	• **Underweight** • **Fine digital tremors +** • **PR: 106bpm**
CASE 2	• **Underweight. BMI: 15.6kg/m^2** • **Fine digital tremors +** • **PR: 112bpm** • **Thyroid swelling + Exophthalmos +**
CASE 3	• **Fine digital tremors +** • **Moist, warm palms** • **PR: 108bpm** • **Thyroid swelling +**

CASE 2 (permission was obtained from patient for presentation)

	MENTAL STATUS EXAM	INVESTIGATIONS	TREATMENT
CASE 1	• Shouting, agitated • Easy distracted • Irritable • **Delusion of grandeur+**	• Total T3- 4.92 • Total T4- 15.89 • TSH- 0.06	• T.Olanzapine 10mg-15mg
CASE 2	• Disinhibited, restless, chanting hymns • Euphoric • **Flight of ideas +, delusion of grandeur+**	• Total T3- 4.71 • Total T4- >24.00 • TSH- <0.01 • TSH-R Ab +ve	• T.Carbimazole 20mg-40mg
CASE 3	• Restless • Irritable • **Pressured speech** • **Flight of ideas +**	• Total T3- 5.05 • Total T4- 19.80 • TSH- 0.08 • USG neck S/O thyroiditis	• T. Propranolol 20-40mg

DIAGNOSIS

- Hyperthyroidism
- Organic Mood [affective] disorder

DISCUSSION

- Hyperthyroidism is accompanied by psychiatric symptoms including dysphoria, anxiety, restlessness, impaired concentration.
- Approximately 60% of hyperthyroid patients have an anxiety disorder, 31% have depressive disorders. Overt psychotic illness occurs in approximately only 10% of hyperthyroid patients.
- Mania is relatively uncommon. More likely to occur if the patient has family history or is a K/C/O mood disorder.

Bauer, M., Goetz, T., Glenn, T. and Whybrow, P.C. (2008), The Thyroid-Brain Interaction in Thyroid Disorders and Mood Disorders. Journal of Neuroendocrinology, 20: 1101-1114.

DISCUSSION

- While symptoms of irritability & hyperexcitability have been described in patients of hyperthyroidism, it is rare that they meet the diagnostic criteria for mania.
- The exact mechanism is unknown- it is suggested that the hyperthyroid-induced hyperadrenergic system disrupts the adrenergic pathway between locus coeruleus and the frontal lobe that subserve attention and vigilance.

Asif H, Nwachukwu I, Khan A, Rodriguez G, Bahtiyar G. Hyperthyroidism presenting with mania and psychosis: a case report. Cureus. 2022 Feb 17;14(2).

DISCUSSION

- There is ample evidence that the modulatory effects of thyroid hormones on the serotonin system may be due to an increase in serotonergic neurotransmission (by increasing $5HT^{2}$ receptor sensitivity or reducing sensitivity of $5HT^{1A}$ receptors).
- Thyroid hormones also interact with other neurotransmitter systems involved in mood regulation, including dopamine post-receptor and signal transducing processes, as well as gene regulatory mechanisms.

Bauer, M., Goetz, T., Glenn, T. and Whybrow, P.C. (2008), The Thyroid-Brain Interaction in Thyroid Disorders and Mood Disorders. Journal of Neuroendocrinology, 20: 1101-1114.

DISCUSSION

- In a study conducted to assess psychiatric symptoms in 17 patients of thyroid gland dysfunction (10 hyperthyroid & 7 hypothyroid),

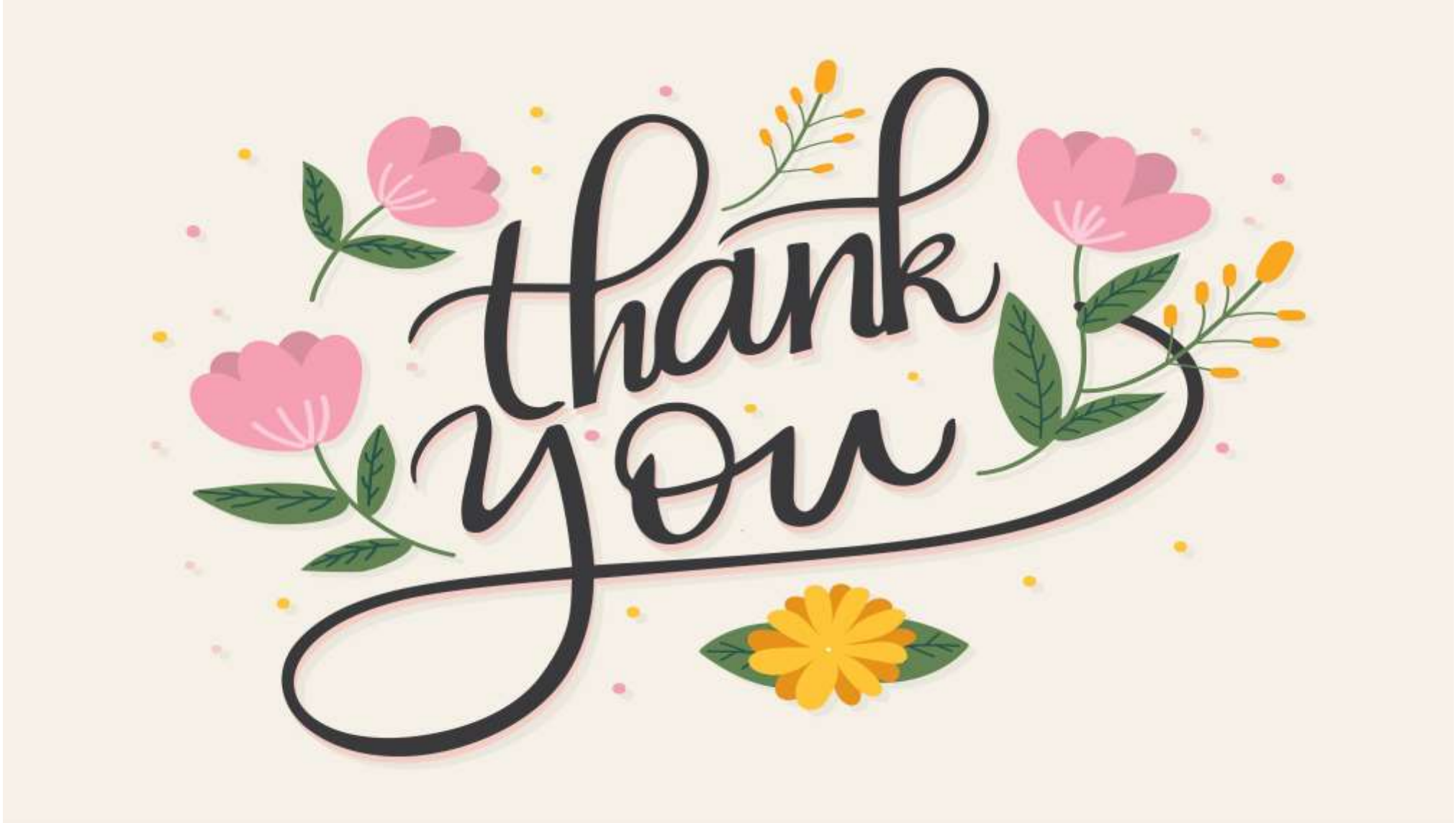
1) Cognitive impairment was equally seen in both groups.
2) Depression predominated amongst hypothyroid individuals.
3) Hyperthyroid patients mostly suffered from subjective anxiety & irritability. Manic symptoms were rare.

Whybrow PC, Prange AJ Jr, Treadway CR. Mental changes accompanying thyroid gland dysfunction. A reappraisal using objective psychological measurement. Arch Gen Psychiatry. 1969 Jan;20(1):48-63.

DISCUSSION

- Thus the aim of showcasing this series of cases was to bring to light this rare presentation amongst hyperthyroid patients.

Trzepacz PT, McCue M, Klein I, Levey GS, Greenhouse J. A psychiatric and neuropsychological study of patients with untreated Graves' disease. General hospital psychiatry. 1988 Jan 1;10(1):49-55.


thank
you