

Relationship and Management of Anxiety, Depression, Hypothyroidism, and Contraceptives

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Background & Purpose

The thyroid is an important organ that largely regulates metabolism but also releases hormones that have a large impact on psychological conditions like anxiety and depression. Thyroid concentrations are affected by exogenous estrogen levels, commonly found in hormonal contraceptives (HCs). HCs alter hormone levels in the body which have potential to affect mood.

Explore the effects of anxiety/depression, hypothyroidism, and hormonal contraceptive on each other and delineate potential management options for this patient population with comorbidities and polypharmacy.

PICOT

What is the physiologic and pathophysiologic relationship between anxiety/depression, hypothyroidism, and hormonal contraceptive use and how does this affect management in these patients?

Design & Methods

Keywords:

- Hypothyroidism, anxiety, depression, HCs, side-effects, risk factors, treatment efficacy

Inclusion:

- Published after January 2018, written in English, females 12-55 yo, anxiety/ depression diagnosis, hypothyroidism diagnosis, prior/current HC use

Exclusion:

- Published before January 2018, not written in English, no listed diagnoses above

Summary of Evidence Search:

Synthesis of Evidence

The evidence reviewed consisted of systemic reviews, meta-analysis, cross sectional, and qualitative reviews. Reviewed 21 articles total and included 11 articles overall in this analysis.

Databas e	Yielded	Reviewe d	Included in Analysis
PubMed	13	13	6
Medline	25	8	5
Total	38	21	11

Results

Depression/ anxiety & Hypothyroidism

Mental, QoL, and thyroid function & characteristics of hypothyroidism						
	Before treatment			After treatment		Btwn Gps
	S. Hypo	O. Hypo	Control	S. hypo	O. Hypo	P
BDQ	7.6+/- 6.7	9.9+/- 6.7	4.7+/- 5.6	6.3+/- 8.2	4.6+/- 5.3	0.009
HRDS	8.3+/- 5.2	10.4+/- 5.8	6.7+/- 5.6	5.8+/- 4.9	5.1+/- 4.4	0.024
HARS	6.4+/- 0.1	6.9+/- 1.2	8.4 +/- 5.4	6.9+/- 5.9	6.6+/- 5.5	0.007
PCS	47+/-10	41+/- 11	50+/-6	52+/-9	51+/-8	ns
MCS	44+/-14	41 +/- 12	52 +/-9	48+/- 12	51+/-8	ns

Depression/Anxiety & HC:

Protective in some. Antidepressant rx required in others. Timing: worse mood during menses and better before while taking HCs.

Hypothyroidism & HC:

Ethinyl-estradiol 20-35 ug/day and conjugated estrogens 0.625 mg/day increase serum TBG concentrations by 30-50% and serum T4 by 20-35%. 45% dose increase required to maintain normal serum TSH concentration in patients with hypothyroidism taking estrogen-containing HCs.

Best Practice

Discussion:

Providers should initiate screening for thyroid function given that underactive function of thyroid can have negative effects on mood; further, providers are encouraged to pursue careful monitoring of thyroid function after treatment with thyroid hormone replacement and continue to monitor for the presence of mood disturbances.

Based on this analysis, with the mixed results of HCs effects on mood, providers are recommended to consider their patient’s age, discuss with the patient about the reason for HC use, goals and expectations with HC use, and potential side effects of HCs. Close follow up of patient’s status is also recommended in patients on HCs.

Best Practice:

Discussion continued:

Providers should screen for and treat thyroid malfunction prior to initiation of hormonal contraceptives. Following the initial screening, providers should monitor thyroid hormone levels after initiation of HC use and regularly thereafter.

Limitations/Further study:

Variety of patient responses of HC use affecting mental health symptoms limiting general guidelines or protocols for management. Subjective responses from patients which could lead to faulty evidence. Small study sizes limiting applicable recommendations for large populations.

Conclusion

Thyroid function is affected by the hormones in contraceptives. Mental health conditions such as anxiety and depression are affected by the patient’s thyroid function. Patients taking HCs have a risk for development or worsening of mental health conditions. Therefore, when managing anxiety and depression in this patient population, providers should consider this relationship, discuss goals and expectations with the patient, and provide regular follow-up with their patients. The treatment will therefore be unique to each patient. Special consideration should be paid by the provider and future research should be devoted to evaluating patients’ comorbidities, polypharmacy, and risk factors when determining a treatment regimen for patients with hypothyroidism and anxiety/ depression who are utilizing HCs.

References

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