Prevalence of Depression in Patients with Pituitary Adenomas: Association of Depression with Perceived Social Capital

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BACKGROUND

• Pituitary gland ↔ limbic system ➔ psychological and psychiatric symptoms

• 2° neuroendocrine effectors linked to depression. Brain-Derived Neurotrophic Factor (BDNF) (Berry 2011)

• Sleep disturbance ➔ Depression

• Social capital linked to psychological & physical health

• Social deprivation linked to depression
LIMBIC SYSTEM

HIPPOCAMPUS

HYPOTHALAMUS

THALAMUS

PITUITARY
Prevalence of Pituitary Adenomas

Incidentalomas

- 15-26% of the population estimated to have PA
- 20% at autopsy
- 1:6 from radiologic evidence
- 15% of all brain tumors
- Incidence increases with age: 30% at 50-60 yrs

PITUITARY RESPONSIBILITIES

- Estrogen
- Testosterone
- Cortisol
- Growth Hormone
- Oxytocin
- ADH
- Progesterone
- Prolactin
- TSH
Circadian Pituitary Hormone Production

- **Melatonin**
- **Cortisol**
- **Growth hormone**
CUSHING’S DISEASE
AIM

• To investigate the prevalence of depression in patients who were newly diagnosed with pituitary adenomas and

• To evaluate the impact of perceived interpersonal and social support on depression severity.

• Secondary analysis
  – the prevalence of depression by tumor hormonal expression including:
    
    non-functional adenomas (NF)
    prolactinomas (P)
    growth hormone (GH) secreting adenomas
    adrenocorticotrophin (ACTH) secreting adenomas.
DEFINITIONS:

• Social Support:
  process of interaction between relationships which improves coping, self esteem, belonging and competence through actual or perceived changes in physical or psychological resources.

• Social Capital:
  social support as an external positive resource

• Depression: As per DSM IV

(Mattson 2011)
STUDY METHODS:

- Prospective Questionnaire - 27 questions
  - 21 question Beck Depression Inventory II (BDI-II)
  - 6 questions designed to solicit the patient’s perception of social support from family member, spouse/partner and friends
- Crohnbach’s alpha 0.952.
- Included: New patients with adenoma
- Excluded: unstable meds in prior 6 mths
  major life event in prior 6 mths
- Convenience sample
RESULTS

N=103 patients

Male: N=32
- Non-functioning Pituitary adenoma: N=44
  - CO-PRL/GH: N=2
- Prolactinoma: N=28
- Growth Hormone: N=9
- ACTH: N=2

Female: N=71
- Non-Hormonal: N=18
## RESULTS: Demographics

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<th>Female</th>
<th>Age</th>
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<td>Mean Depression Scores</td>
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<td>Mean Support Scores</td>
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RESULTS: Depression Prevalence

- Mild: 28%
- Moderate: 65%
- Severe: 7%
Depression vs Support per Diagnosis

![Bar graph showing mean scores for depression and support per diagnosis. The diagnoses are NF, P, GH, CUSH, C0, LH, RC, and Other. The graph indicates higher mean scores for depression compared to support across all diagnoses.](image-url)
Correlations

Depression and social support

$r = 0.315$, $p = 0.001$

No correlation between depression and any diagnosis
Study Limitations

- Self report
- No general population standardization
- Limited sample by diagnosis
- Needs follow up
Conclusion:

- Depression is common in patients with pituitary lesions
- Most patients reported high levels of social support despite diagnosis and level of depression
- Some diagnoses may be more susceptible to severe depression than others.
- Severe levels of clinical depression warrant further evaluation
- Tools for early identification of at risk patients provide for timely intervention and improved outcomes.
- Further evaluation of the impact of specific social capital is warranted.
References


• Berry, A., Bellisario, V., Capoccia, S., Tirassa, P., Calza, A., Alleva, E., Cirulli, F., (2012). Social deprivation stress is a triggering factor for the emergence of anxiety- and depression-like behaviours and leads to reduced brain BDNF levels in C57BL/6J mice. *Psychoneuroendocrinology*, 37, 762—772


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Thank you.

Questions?
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