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Beyond the Finish Line: A Novel, Integrative Approach to Athletic Overtraining Syndrome from a Sports Psychiatry Perspective

BACKGROUND

- Athletic Overtraining Syndrome (AOS) usually entails a greater than two months unexplained decline in sport-specific performance
- Common symptoms: mood-related (abulia, depression, irritability, distractibility), fatigue- or sleep-related, and somatic (muscle soreness, frequent sickness)
- Current theories behind the pathophysiology of AOS:
  - Autonomic imbalance
  - Central fatigue
  - Cytokine hypothesis
  - Disturbed Sleep
  - Low energy availability – relative energy deficiency
  - Glycogen depletion

CASE HISTORY

- 53yo M (TT) marathoner with a three-year history of lower extremity heaviness, mental fog, anhedonia, abulia, and increased perceived running effort
- Sx worsened in the last month prior to presentation, especially regarding mood symptoms such as irritability, apathy, and depression.
- Sx began in the context of heavy training and completion of a race. He attempted three separate times to undergo three months of complete rest as self-treatment but was unsuccessful.
- Completed sports medicine, endocrinology, and specialist evaluations
- Failed trials of cross training and supplementation with amino acids, vitamins, and electrolytes.
- Common causes mimicking AOS (drug-related, neurological, endocrine, infectious, metabolic, cardiopulmonary, etc.) were ruled out through laboratory and radiological examination.

Testosterone, TSH, CBC, CMP, EKG, MRI brain, troponin, sex hormones, iron studies WNL

Prolactin was minimally high at 27.4 in 9/2023

A small study of 10 athletes found to have elevated prolactin and ACTH after performance testing (Meeusen et al., 2010)

Serum + free Cortisol, lactate (AM fasting after a light workout) levels pending

Those with OTS have found to have lower lactate following performance testing (Meeusen et al., 2010)

- TT was diagnosed with AOS, along with a secondary clinical depression.

TREATMENT COURSE

- Weekly visits
- Bupropion 150mg daily, complete rest for six months, brief psychodynamic psychotherapy, values and goal clarification, and dietary change (modifying access to sweets) were recommended.
- Through psychodynamics, he gained insight into unconsciously connecting the loss of running to a previous loss of relationship that was contributing to his depression.
- After six months, TT returned to running without symptom relapse (measured by the Beck Depression Inventory (BDI) and Profile of Moods States (POMS) scales) over the following six months.

Date	Score
9/2023	28
10/2023	23
11/2023	20
12/2023	15
1/2024	15
2/2024	13
3/2024	6
4/2024	4
5/2024	4
6/2024	2

Table 2. BDI

Figure 2. Anna Frost, NZ runner

DISCUSSION

- Case reports have discussed AOS resolving with complete rest but this case is unique in the length of complete rest needed, combined with other successful treatments not established in the literature.
- This patient's improvement with the medication and decrease in impulsive sugar binges speaks to the autonomic imbalance and cytokine hypotheses of AOS (Armstrong and VanHeest, 2002).

--> Bupropion has action on the dopamine transporter (normalizing dopaminergic tone) and proinflammatory cytokines, reducing TNF alpha (Armstrong and VanHeest, 2002).

- TT's improvement in psychological insight and resolution of conflicts dealing with "a loss" credits psychological factors that can be targeted to treat depressive aspects of AOS.
- The syndrome's multi-system pathology is at display given how various types of treatment together helped resolve this patient's condition.

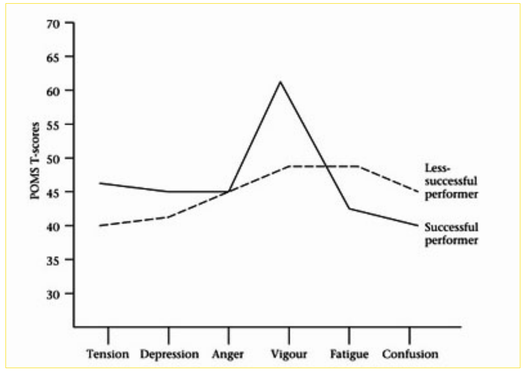

Figure 1. POMS Iceberg Profile

Figure 3. Simone Manuel, USA swimmer

IMPLICATIONS

- There is limited consensus on standard diagnostic tests, pathophysiology, and treatment recommendations due to scarce available literature. This case adds to the literature base.
- This case highlights a unique treatment and the importance of integrative principles in treating disorders while promoting whole health, especially with conditions that do not have established treatments or pathophysiology.
- Brief psychodynamic principles and thorough childhood history can be utilized in psychiatric care to help understand and treat the patient

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