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Case Report

Acne and Premenstrual Syndrome in a Final-Year Medical Student: Case Report on Combined Drug and Herbal Management

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ABSTRACT

Acne vulgaris and Premenstrual Syndrome (PMS) are common among women of reproductive age and often share hormonal, inflammatory, and psychosocial triggers. In high-stress settings such as medical training, the manifestation of these conditions may be intensified by lifestyle factors, including poor diet, disrupted sleep, and emotional strain. Integrative therapeutic approaches that combine conventional treatments with evidence-based herbal and lifestyle modifications are increasingly recognised for their holistic, patient-centred benefits. This report presents the case of a 26-year-old final-year medical student who developed acne and PMS symptoms over a three-month period, coinciding with intense academic stress. Acne was characterised by red, tender papules on the face and upper back, while PMS included mood swings, abdominal cramps, skin sensitivity, and intermittent headaches. Sleep disturbances and anxiety were also present. Laboratory and imaging investigations were unremarkable. A comprehensive management plan was initiated, incorporating dietary adjustments (removal of dairy and refined sugars), increased hydration, physical activity, and stress management. Herbal therapies included *Vitex agnus-castus* (to support hormonal regulation) and *Taraxacum officinale* (to aid hepatic detoxification). Nutritional supplementation with zinc, omega-3 fatty acids, and vitamin A was added. Pharmacological therapies were considered as adjuncts. The patient reported substantial improvement in both dermatological and menstrual symptoms following exam completion and lifestyle adherence, with sustained benefit during remote and in-person follow-up. This case highlights the utility of an integrative approach in managing stress-aggravated acne and PMS. It demonstrates the potential benefits of addressing both physiological and psychosocial domains and supports further investigation into combined herbal-pharmacologic care models.

Keywords: Acne, Herbal Management, Medical Student: Case Report, Premenstrual Syndrome.

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INTRODUCTION

Acne vulgaris and Premenstrual Syndrome (PMS) are among the most prevalent conditions affecting women of reproductive age, with multifactorial aetiologies involving hormonal, inflammatory, psychosocial, and lifestyle-related components (Bungau *et al.*, 2025). Acne vulgaris is a chronic inflammatory disorder of the pilosebaceous unit, often exacerbated by hormonal fluctuations (particularly androgens), stress-induced cortisol surges, poor dietary habits, and dysregulated skin microbiota (Vasam *et al.*, 2023). Similarly, PMS is a constellation of somatic and affective symptoms that occur during the luteal phase of the menstrual cycle and resolve shortly after menstruation begins (Alshdaifat *et al.*, 2022). The pathophysiology of PMS is complex and not yet fully elucidated, but it is believed to involve neuroendocrine dysregulation, fluctuations in sex steroid hormones, serotonergic activity, and individual stress responses (Cheng *et al.*, 2025). In populations such as medical students, who are subjected to high academic demands and psychological stress, these conditions may be further amplified (Stewart *et al.*, 1995). Chronic stress is known to impair The Hypothalamic-Pituitary-Adrenal (HPA) axis and immune function, contributing to systemic inflammation, altered hormonal signalling, and behavioural changes such as poor sleep and irregular eating patterns-all of which can exacerbate dermatologic and gynaecologic symptoms (Herman *et al.*, 2016; Ring, 2025). The compounding nature of these psychosomatic triggers necessitates a comprehensive management approach (Cheng *et al.*, 2025). An increasing body of evidence supports the utility of a multimodal and integrative therapeutic framework that combines conventional medical strategies (e.g., pharmacologic treatments, hormonal regulation) with evidence-informed complementary interventions, such as

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nutritional modulation, herbal therapy, physical activity, and stress management techniques (Lavretsky, 2009; Tabish, 2008). In particular, the use of botanicals like *Vitex agnus-castus* for hormonal regulation and *Taraxacum officinale* for hepatic detoxification has gained interest in the context of female reproductive health and dermatology, although high-quality clinical evidence remains limited (Van Die *et al*., 2013). This case highlights the potential benefits of a patient-centred, integrative approach in managing co-existing PMS and acne in a young female medical student. It underscores the importance of addressing root causes, such as stress and inflammation, while respecting patient autonomy and preferences. Such a model aligns with current trends in personalised medicine and holistic care, particularly for chronic, stress-sensitive conditions that impact both physical and emotional health.

CASE PRESENTATION

A 26-year-old female medical student in her final year presented with a three-month history of acne vulgaris and Premenstrual Syndrome (PMS), both of which appeared to coincide with heightened academic stress related to board examinations and internship applications. The acne manifested as small, red, tender inflammatory papules predominantly affecting the forehead, cheeks, and upper back, with a severity rated 5 out of 10 on a visual analogue scale. The patient reported specific triggers, including emotional stress, consumption of chocolate and spicy or fried foods. Topical application of natural remedies such as aloe vera gel and tea tree oil provided partial symptomatic relief.

Concurrent with the onset of acne, the patient experienced moderate to severe PMS symptoms, notably cyclical mood disturbances, irritability, and lower abdominal cramps (pain score 7/10), occurring in the luteal phase and typically resolving at the onset of menstruation. These symptoms were accompanied by skin sensitivity, intermittent tension-type headaches, and worsening of acne lesions during the premenstrual period.

Psychosocially, the patient described poor sleep quality, characterised by late sleep onset and non-refreshing sleep, as well as persistent anxiety centred around academic performance. Despite these concerns, she reported no alarming or red flag symptoms, and there was no history of systemic illness, recent hospitalisation, or medication use other than occasional paracetamol and NSAIDs for symptomatic relief. The clinical picture was consistent with hormonally mediated acne and stress-exacerbated PMS, within the broader context of academic burnout and lifestyle dysregulation.

Investigations

All relevant blood tests and imaging results were within normal limits.

- **Tongue:** Red/pink with yellow coating.
- **Pulse:** Full, warm, and oily.
- **Skin:** Inflammatory acne, mostly on face and upper back.
- **Systemic:** No hormonal disorder suspected.

Differential Diagnosis

- Acne vulgaris (inflammatory),
- Hormonal acne,
- Primary dysmenorrhea,
- Premenstrual dysphoric disorder (ruled out).

Treatment

Naturopathic and Lifestyle Interventions:

- **Diet:** Elimination of dairy, refined sugars, and processed oils; probiotic foods; increased zinc and omega-3.
- **Hydration:** Increased to ≥8 cups/day.
- **Exercise and Sleep:** Regular cardio and sleep hygiene.
- **Stress Management:** Breathing exercises, journaling.

Herbal Supplementation

- *Vitex agnus-castus* (300 mg/day, morning) - hormonal support.
- *Taraxacum officinale* (500 mg/day or tea, afternoon) - liver detox.
- Topicals: Lavender, tea tree oil, chamomile water.

Nutritional Supplements

- Zinc (25-60 mg/day), Omega-3 (3-6 g/day), Vitamin A (5000 IU/day).

Pharmacological Options (as needed)

- **Acne:** Topical retinoids, antibiotics, benzoyl peroxide, oral contraceptives.
- **PMS:** NSAIDs, SSRIs, diuretics, oral contraceptives.

Outcome and Follow-Up

The patient was followed up informally through WhatsApp during her international internship placement in Canada. She reported marked improvement in both acne and PMS symptoms, particularly after the conclusion of her final-year examinations. These improvements were primarily attributed to reduced stress levels and consistent adherence to the lifestyle and naturopathic recommendations initiated prior to her travel. She noted enhanced skin clarity, reduced frequency and severity of mood

swings, and improved menstrual comfort. Additionally, her sleep quality and overall energy levels were reported to have improved significantly during this period.

Upon her return to the country, a formal in-person follow-up consultation was scheduled to reassess her clinical progress, review adherence to nutritional and herbal protocols, and re-evaluate the need for any pharmacological intervention. The continuity of care, even via remote communication, proved effective in maintaining patient engagement and therapeutic momentum. Ongoing support will focus on reinforcing dietary patterns, stress regulation, and potential gradual tapering of supplements, with the aim of promoting long-term self-management and reducing dependency on external interventions.

DISCUSSION

This case underscores the complex interplay between psychological stress, hormonal fluctuations, dietary influences, and inflammatory pathways in the manifestation and persistence of acne and PMS. In young female populations-particularly those in high-pressure environments such as final-year medical training-these conditions often coexist and may be exacerbated by irregular sleep, poor dietary habits, and emotional distress. The patient's presentation was emblematic of these multifactorial influences, which required a comprehensive and individualised approach.

The integrative management strategy implemented here, combining nutritional interventions, herbal medicine, physical activity, and stress reduction techniques, yielded favourable outcomes and resonated with the patient's values and preferences (Hoenders *et al*., 2024). Importantly, this case highlights the therapeutic potential of *Vitex agnus-castus* (chasteberry) in modulating luteal phase symptoms and supporting hormonal balance, which is well-supported in the literature for PMS but remains under-explored in acne treatment (Puglia *et al*., 2023). *Taraxacum officinale* (dandelion) was used for hepatic support and digestive detoxification, aligning with traditional herbal paradigms that link skin health to liver function. Although *Echinacea* was discussed for its immunomodulatory role, it was not used in this case due to lack of indication and potential autoimmune concerns (Herrera Vielma *et al*., 2025; Pfingstgraf *et al*., 2021).

Notably, the patient's improvement was not solely attributable to specific supplements or pharmacological agents, but rather to a systems-based approach that addressed the root causes of her symptoms-namely, stress, inflammation, and hormonal imbalance. This supports the growing emphasis on holistic, patient-centred models of care, which are especially relevant in academic and occupational contexts where chronic stress is a known trigger for dermatological and gynaecological disorders (Abbott, 2017; Seiler *et al*., 2024).

However, while the benefits of herbal therapy are increasingly recognised, clinicians must remain vigilant about potential herb-drug interactions, contraindications (e.g., in pregnancy or with hormonal contraceptives), and the variable quality of over-the-counter herbal products (Khoshnoud *et al*., 2025; M *et al*., 2025). The importance of informed consent, professional oversight, and shared decision-making cannot be overstated, especially when incorporating non-conventional therapies (Alsanosi and Padmanabhan, 2024).

Finally, this case also illustrates the value of flexible continuity of care, including the use of digital communication tools (e.g., WhatsApp) for follow-up and patient education. Such strategies may be particularly useful for transient or mobile patient populations, such as students or professionals in training, where adherence to care plans can be easily disrupted by relocations or academic pressures (Fitzpatrick, 2023).

CONCLUSION

Practice Implications

Acne vulgaris and PMS are complex, interrelated conditions with shared hormonal, psychological, and lifestyle-driven mechanisms-particularly prevalent among young women. Their management demands a holistic, biopsychosocial approach that addresses internal physiological imbalances alongside behavioural and environmental contributors (Khan *et al*., 2022). Chronic psychological stress, especially in high-pressure environments such as medical training, can disrupt Hypothalamic-Pituitary-Adrenal (HPA) axis function, thereby exacerbating inflammatory and hormonal dysregulation (Mariotti, 2015). As such, incorporating stress management strategies-including mindfulness, adequate sleep, and regular physical activity-is essential to restoring hormonal equilibrium and improving overall symptom control.

Non-pharmacological interventions, including targeted dietary changes, optimal hydration, and nutritional supplementation (e.g., zinc, vitamin A, and omega-3 fatty acids), can be highly effective first-line measures for managing both acne and PMS (Carlini *et al*., 2022). In addition, herbal therapies such as *Vitex agnus-castus* and *Taraxacum officinale* offer potential benefits for hormonal and hepatic support, though their application must be grounded in clinical evidence and delivered under professional supervision to avoid adverse interactions (Brice-Ytsma and McDermott, 2020). Ultimately, an integrative treatment framework-balancing conventional medicine with complementary approaches-can yield favourable outcomes, provided there is careful oversight. Ensuring patient safety through shared decision-making, informed consent, and continuous monitoring is vital in promoting responsible, ethically sound integrative care (Shannon *et al*., 2011).

Patient's Perspective

"Balancing final-year exams, internship applications, and my own health felt overwhelming. I found myself constantly tired, stressed, and uncomfortable in my own skin-both literally and figuratively. I was hesitant to rely solely on conventional medications, especially since I didn't want long-term hormonal treatments or antibiotics without trying other options first.

What helped the most was being listened to without judgment and being offered choices that aligned with how I wanted to approach my health. The integrative approach made me feel empowered-it wasn't just about fixing my skin or my cycle; it was about understanding the underlying causes and building daily habits to support my body.

I've learned to tune in to my stress levels, adjust my diet, and be more proactive about my health. I still have work to do, but I now feel equipped with practical tools and a clearer sense of how my lifestyle affects my well-being. It's been a learning journey-not just as a patient, but as a future physician too."

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ABBREVIATIONS

HPA: Hypothalamic-pituitary-adrenal; **NSAIDs:** Nonsteroidal anti-inflammatory drugs; **SSRIs:** Selective serotonin reuptake inhibitors; **PMS:** Premenstrual syndrome.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ETHICS STATEMENT

Patient consent for publication has been obtained.

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