

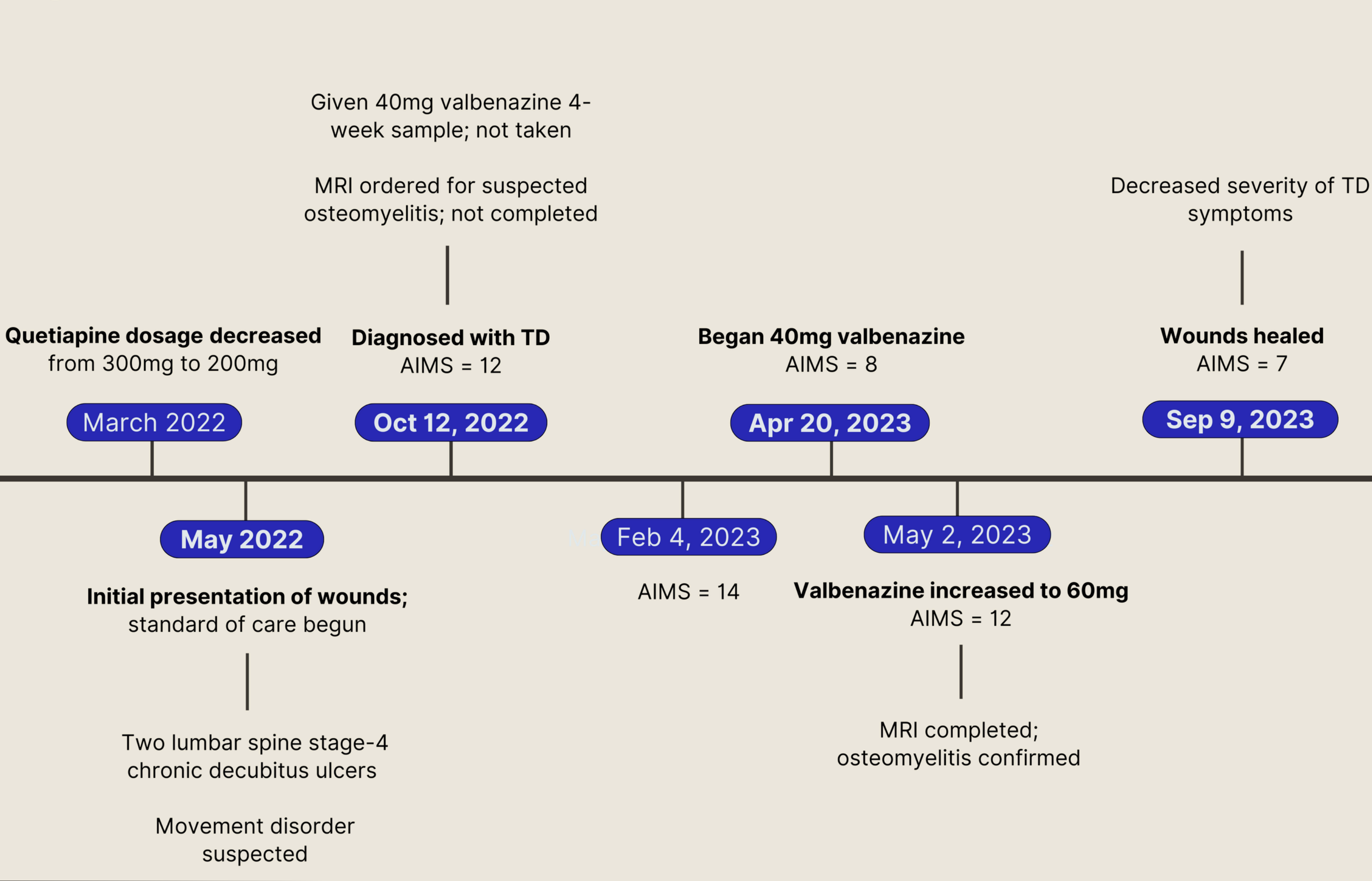
Valbenazine Treatment for Tardive Dyskinesia in a 64-Year-Old Female With Chronic Wounds due to Hypermobility: A Case Report



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Figure 1. Onset and Treatment Timeline



Abstract

In the field of geriatrics, the patient population is more sensitive to medications than young adults. This is evident in the higher rates of tardive dyskinesia (TD) among the elderly compared to younger adults. As tardive dyskinesia often develops in geriatric patients as a side effect of long-term antipsychotic medication use, identifying and treating TD can involve a complex overlap of mental disorders, comorbidities, and concomitant treatment regimens. It is estimated that at least 20% of patients using first-generation antipsychotics develop TD, with petite, post-menopausal female patients at heightened risk¹.

This case exemplifies the necessity of evaluating and treating geriatric patients with an awareness and consideration of multiple comorbid conditions. The patient, a 64-year-old female with bipolar disorder type 1, was initially seen for the evaluation of chronic lumbar decubitus ulcers that persisted through five months of standard care and developed osteomyelitis; she also presented symptoms of a movement disorder. In consideration of her dyskinesia, demographics, and PMH, including a recent reduction in antipsychotic dosage, the patient was diagnosed with TD. Moreover, the initial and enduring presence of the wounds was determined to be a result of the shear force produced by severe truncal dyskinesia, an unusual factor that had not been previously considered due to its deviation from the traditional paradigm in wound care linking *hypokinesia* with lumbar pressure ulcers. Subsequent initiation of valbenazine treatment mitigated the severity of the dyskinesia and ultimately allowed for the wounds to heal. As this case demonstrates, it is important that providers consider patients' comorbidities and their associated treatment regimens in order to properly evaluate and manage prominent health concerns.

Introduction

Tardive dyskinesia (TD) is a movement disorder characterized by involuntary, jerky movements of the face and body developing as a side effect of dopamine receptor-blocking agents (DRBAs); these include antiemetics as well as antipsychotics (APs), with first-generation APs associated with a higher risk for TD². Patients with mood disorders are at heightened risk, as well as patients who are female, ethnically white or black, of smaller stature, and/or elderly³. Older patients are at significantly elevated risk, even with shorter treatment durations or lower dosages of DRBAs; a prospective study found that for patients aged 55 and older, the cumulative rates of TD after one, two, and three years of AP treatment were 25%, 34%, and 53%, respectively⁴. For patients 60+ years old, TD can be diagnosed after only one month of AP exposure, in contrast to the three-month minimum duration of AP treatment required for diagnosis in other adult patients³. Once TD has developed, the condition will persist without intervention and can worsen despite dosage adjustments or complete discontinuation of the affecting agent.

Current treatment options for TD are known as vesicular monoamine transporter 2 (VMAT2) inhibitors. Valbenazine is the newest iteration of this class of medications, offering more selective VMAT2 inhibition at higher concentrations than its predecessors^{5,6}. Valbenazine has been shown to improve symptoms of TD compared to placebo and is well-tolerated by patients throughout long-term usage, in both older and younger adults^{7,8,9}. In this case, the patient's wounds failed to heal under conservative care until valbenazine was integrated into the treatment regimen. Osteomyelitis of the wounds and patient noncompliance compounded the complexity of the treatment protocol; the patient did not consistently follow the treatment regimen for six months after rejecting the initial diagnosis and provision of valbenazine. However, once the patient initiated compliance with the valbenazine treatment, both wounds healed completely within four months and dyskinesia improved markedly, as measured with the AIMS standard¹⁰. This case thus exemplifies the effects of diagnosis aversion and overlapping comorbidities in geriatric patients, with a call to all providers and especially geriatricians to carefully consider the interacting symptoms and treatments for cognitive conditions, mood disorders, and drug-induced syndromes.

Case Description

We present a unique case in which a patient was referred to a geriatrician and certified wound care specialist-physician (CWSP) for the evaluation of two lumbar spine stage-4 decubitus ulcers that had persisted for five months despite standard care. Wounds had first presented in May 2022 (Fig. 1). Patient was a 64-year-old female with PMH of hypothyroidism, pancreatitis, osteoporosis, levoscoliosis, GERD, and bipolar disorder type 1. Patient had over ten years of antipsychotic use including quetiapine, the dosage of which had been lowered from 300mg to 200mg two months before the initial wound presentation. Standard care procedures were maintained, including surgical debridement of the tissue at regular intervals. Prior knowledge and awareness of TD, as well as consideration of the patient's hyperkinesia and AP exposure led to a diagnosis shortly after initial assessment; furthermore, the provider determined that tardive dyskinesia was in fact the underlying cause of the wounds. Specifically, the patient's uncontrolled truncal movements while sitting or lying in bed created friction substantial enough to break the skin and result in shear ulcers. Under this diagnosis, 40mg samples of once-daily valbenazine were provided to the patient.

The patient refused to accept the diagnosis despite the severity of her involuntary movements and increasing complications, reflecting a lack of bodily awareness. The patient's diagnosis aversion and noncompliance delayed treatment and recovery throughout the treatment protocol. Osteomyelitis was first suspected at the initial visit in October 2022 but was not confirmed for seven months due to the patient refusing an MRI (Fig. 1). The patient's wounds were found to have heavy growth of *S. aureus*; dicloxacillin was prescribed and successfully resolved the superficial infection. At this time, the lumbar wound measured 2.2 cm x 1.0 cm x 1.0 cm, the sacral wound measured 3.0 cm x 1.5 cm x 0.3 cm (Fig. 2a). AIMS score was 12 (Fig. 3). As aforementioned, 40mg samples of valbenazine were provided but not used by the patient. The wounds underwent multiple surgical debridements at follow-up visits, during which the patient continually refused valbenazine.

Four months later, in February 2023, the patient was still refusing valbenazine and her AIMS score had increased to 14. Lumbar wound measured 1.3 cm x 0.8 cm, sacral wound measured 0.7 cm x 1.0 cm x 0.2 cm (Fig. 2b). Wounds underwent surgical debridement of the tissue at this visit. It was not for another two months, that is, six months after her initial TD diagnosis and provision of valbenazine that the patient initiated compliance and began taking 40mg once-daily valbenazine consistently. By this visit in April 2023, the lumbar wound measured 0.4 cm x 0.4 cm x 0.3 cm with signs of hypergranulation; the sacral wound measured 1.0 cm x 2.0 cm x 0.5 cm (Fig. 2c). Wounds underwent surgical debridement. Within two weeks of consistent valbenazine treatment, the patient and her caregivers reported observable improvements in dyskinesias compared to baseline. This was supported by an AIMS score of 7 at the following visit in May 2023, during which osteomyelitis was confirmed via the patient's MRI. Valbenazine was noted to be well tolerated and dosage was thus increased to 60mg.

Results

The patient was compliant with the 60mg valbenazine treatment regimen, and after four months both wounds achieved full closure. Osteomyelitis was resolved after surgical debridement of the infected tissue and TD symptoms were noted to be significantly mitigated, as evidenced by a final AIMS score of 7. Testimonials from the patient and family also reported improvements, particularly in the patient's ability to walk and cook for herself, among other activities of daily living. The change in AIMS score constituted a 5-point decrease from the patient's baseline, with the most notable improvement in the truncal dyskinesia (Fig. 1, 3). This, in conjunction with standard care, allowed both ulcers to heal and achieve complete closure.

Figure 2. Wounds at Baseline, Intermediate, and Valbenazine Initiation

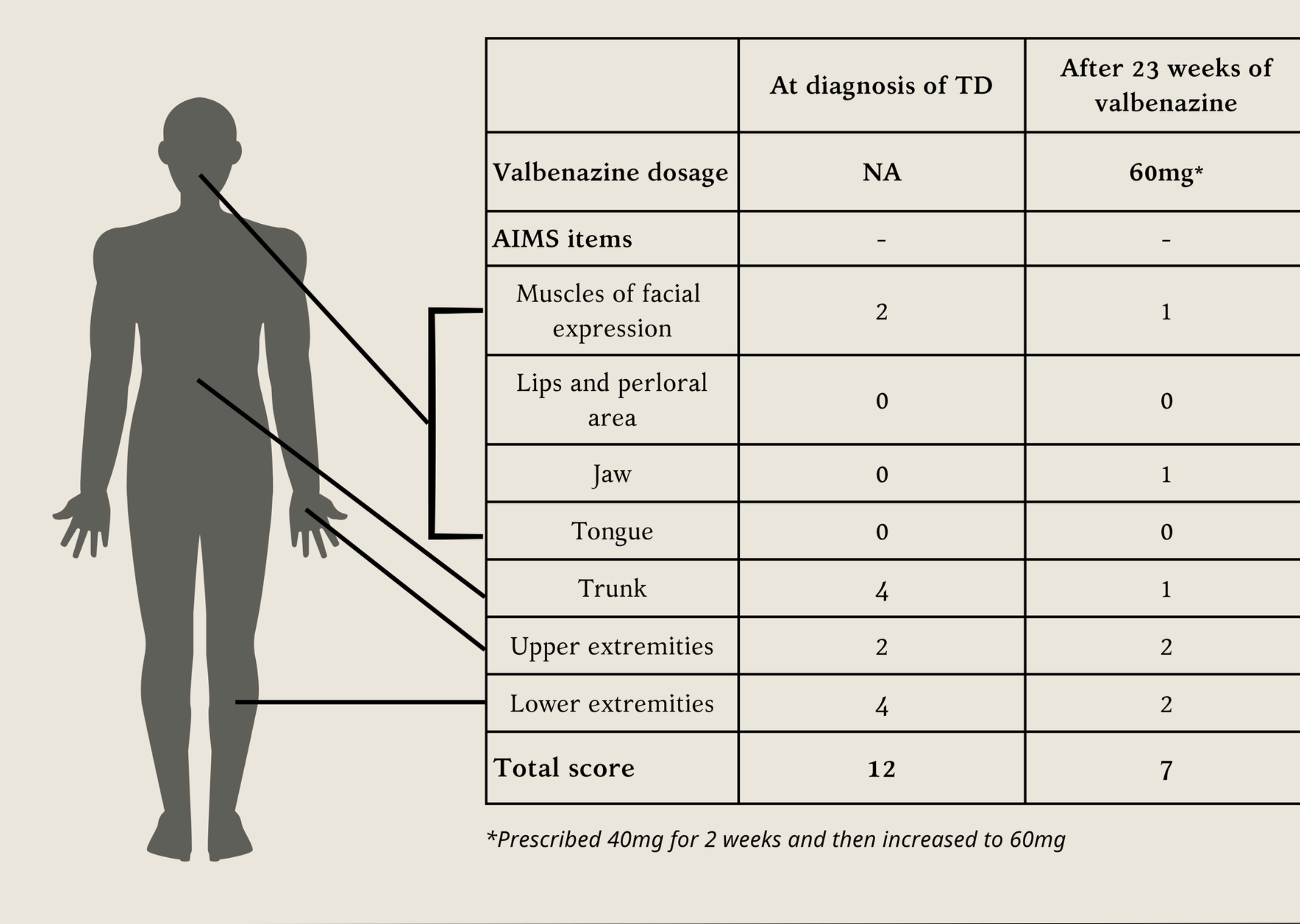


Lumbar wound: 1.3 cm x 0.8 cm
Sacral wound: 0.7 cm x 1.0 cm x 0.2 cm



Lumbar wound: 0.4 cm x 0.4 cm x 0.3 cm, hypergranulation
Sacral wound: 1.0 cm x 2.0 cm x 0.5 cm

Figure 3. AIMS Scores at Diagnosis vs. After 23 Weeks of Consistent Valbenazine Treatment



Conclusion

This patient's diagnosis aversion, due in part to stigma against both her underlying psychiatric condition and its side effects, caused a significant, 7-month delay in healing wounds that had been caused by and persisted due to her TD. Refusal to accept her diagnoses led to patient noncompliance, which prevented adequate, timely treatment and delayed resolution of her wounds. Family members and caregivers contributed to this by supporting the patient's rejection and not considering the potential for new, albeit undesirable, diagnoses to be accurate.

While the traditional paradigm for the development of pressure ulcers is commonly associated with patient hypomobility or immobility, this case reports lumbar "pseudo-decubitus" ulcers arising from *shear force* due to intense truncal dyskinesia, as opposed to traditional pressure ulcers¹¹. The patient's advanced age presented a challenge in differentiating between TD symptomology and the expected decline in motor function associated with aging². However, examining the patient's history of bipolar disorder and extended AP use provided context with which to evaluate and treat the underlying cause of her wounds. The initial failure to identify and manage the patient's movement disorder by the provider allowed the wounds to develop and become infected, a trajectory that likely would have worsened without the diagnosis and treatment of her TD; because the patient was mobile, the influence of her hyperkinesia on the causality and resolution of the wound were not readily considered.

Discussion

This case report highlights how incomplete assessments as well as patients' aversions to diagnoses can create a further layer of complexity in accurately diagnosing concomitant maladies, developing treatment regimens and, importantly, ensuring patient compliance with such regimens. Providers must be willing to consider unconventional prognoses for patients with complex PMH and comorbidities. Since most TD patients develop the movement disorder as both a result of and alongside psychiatric treatments, resistance to diagnoses and patient noncompliance must be considered as possible obstacles to providing adequate patient care; assessing the patient as a whole lends a more accurate understanding of the overlap of their conditions and potentially more accurate diagnoses and optimal interdisciplinary treatment options¹².

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