Medication Adherence in Wilson Disease Patients Treated with Trientine Tetrahydrochloride Supplied by a Single-Source Specialty Pharmacy

J. Heise[1] , V. Tomor[1] , C. Dockery[1] , N. Manamley[2] , M. Heifets[1] , M. DiVito[3] , F. Youschak[3] , J. Sherback[3], F. Askari[4]

[1]Orphalan Inc. Boston, MA, USA, [2]Orphalan UK Ltd, London, UK, [3]PANTHERx Rare Pharmacy, Pittsburgh, PA, USA, [4]University of Michigan, Ann Arbor, MI, USA

Scan me!

Background

Wilson disease (WD) is a rare autosomal-recessive disorder of impaired copper movement caused by ATP7B gene mutations and characterized by copper accumulation. Estimated prevalence is ~1 in 30,000, corresponding to ~9,000 cases in the United States.[1]

Prognosis improves with early diagnosis, effective copper control, and life-long adherence to copper restricted diet and therapy. Adherence to all WD treatments including copper-chelating agents are challenging for people living with WD. Poor adherence is associated with disease progression.[2,3] Risk factors include complex treatment regimens, drug side effects, lack of consistent monitoring and limited disease education.[4]

Trientine tetrahydrochloride (TETA-4HCl), a copper chelator, was launched April 2023, offering WD patients a room temperature stable twice daily dosing treatment option. It forms a stable complex of absorbed copper eliminated from the body through urinary excretion. TETA-4HCl was recently shown to reduce copper absorption from the intestinal tract.[5]

In the USA, TETA-4HCl tablets are dispensed directly to patients through a centralized, single-source rare disease specialty pharmacy.

Objective

Retrospective analysis to characterize the patient population and evaluate treatment adherence of TETA-4HCl

Methods

- Inclusion criteria: WD patients receiving at least one shipment (reflecting therapy initiation) between May 2023 and Dec 2024
- Demographics, patient-reported previous therapies, prescriber data, treatment discontinuation with reasons, patients' shipment history with quantity, day's supply, and date of dispensing were collected prospectively and reviewed retrospectively
- Eligible patients had variables collected through Apr 2025
- Adherence measures[6] (gap days and Proportion of Days Covered) [PDC] were calculated

Adherence Measures Definitions	
PDC: proportion of days a patient has medication on hand over a given time; minimum industry standard is 180 days	**Gap days:** length of days that a patient does not have medication on hand based on shipment history
Calculation: [number of days with drug on hand] / [number of days in a specified period]	**Calculation:** [medication shipment date] – [medication exhaust date]

Results

Demographics

Figure 1: Study Population

Inclusion Criteria: N = 142 patients

Demographics	Adherence: Gap Days	Adherence: PDC
n = 142 patients	n = 126 patients minimum of 3 shipments	n = 93 patients 180-day observation period

Figure 2: Patient Demographics

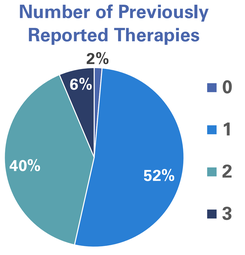
Gender: 78 (55%) | 64 (45%)

Age: Mean 39 years for both genders

Figure 3: Provider Specialty

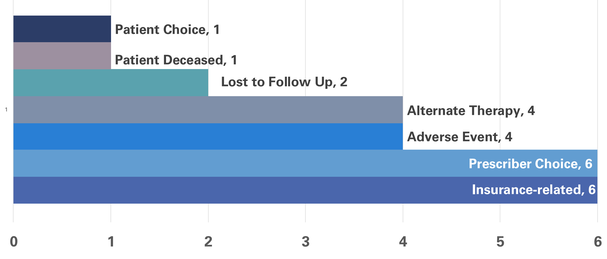
Hepatologist:	Gastroenterologist:	Other:
64%	23%	13%

Figures 4 and 5: Previous Therapies



Previous Therapies	Patient Count
Trientine hydrochloride (brand and generic)	106
Zinc (brand and generic)	67
Penicillamine	35
Unknown/Other	7

Figure 6: Discontinuations



Adherence

Table 1: Adherence Measure: Gap Days

Patient Count	Mean (SD) Shipments	Mean (SD) Gap Days per Shipment
126	13 (6.6)	2.7 (8.7)

Table 2: Adherence Measure: PDC

Patient Count	Mean (SD) PDC	Patients with PDC ≥80%
93	84% (24.6%)	69 (74%)

Figure 7: Distribution of Largest Gap in Therapy by Shipment Number

This image depicts when patients experience their largest gap in therapy. Many patients have therapy gaps with early shipments and around shipment 8. There are few patients with their largest gap late in therapy.

Discussion

In this study population, TETA-4HCl was primarily prescribed by hepatologists (64%) and gastroenterologists (23%).

Most (52%), patients reported having tried at least one prior therapy, with 46% trying two or more. Trientine hydrochloride was the most common reported prior treatment followed by zinc and penicillamine. These treatment patterns reflect the chronic nature of Wilson disease.

The most common reasons for discontinuation of TETA-4HCl in this cohort were unrelated to adverse events.

Adverse event–related discontinuations occurred in 2.8% of patients and included diarrhea, dermatologic allergic reaction, hospitalization (chest pain), and nausea with chest pain. One death, due to stroke, was deemed unrelated to TETA-4HCl.

The refill behavior demonstrated by most patients yielded a mean PDC of 84%. The data suggest strong treatment adherence and highlights the potential value of structured refill coordination and ongoing patient engagement.

Conclusion

- TETA-4HCl was mainly prescribed by hepatologists and gastroenterologists, highlighting their central role in WD care
- Multiple prior therapies were common requiring further study as indications for switching are unknown
- Low discontinuation rates and high adherence suggest good tolerability and persistence in real-world practice
- Strong adherence and refill consistency point to the importance of patient engagement and specialty pharmacy coordination to support successful long-term therapy

References

1. Ala A, Walker AP, Ashkan K, Dooley JS, Schilsky ML. Wilson's disease. Lancet. 2007
2. Jacquelet E, Beretti J, De-Tassigny A, et al. Compliance with treatment in Wilson's disease: On the interest of a multidisciplinary closer follow-up. Rev Med Interne. 2018
3. Roberts E., Schilsky, M. Current and Emerging Issues in Wilson's Disease N Engl J Med 2023
4. Allkhouri N, Gonzalez-Peralta RP, Medici V. Wilson disease: a summary of the updated AASLD Practice Guidance. Hepatol Commun. May 2023
5. Cuvrior™ [package insert]. Evreux, France: Orphalan SA;2022.
6. Pharmacy Quality Alliance (PQA). Advancing Quality Medication Use. Available at: https://www.pqaalliance.org/. Accessed October 9, 2025.

Contact Info: Orphalan Inc Medical Affairs Dept: Veronica Tomor PharmD veronica.tomor@orphalan.com