



Letter to Editor

Could the Withdrawal of Opium Tincture from Iran's Addiction Treatment Program Increase Acute Methadone Poisoning and Mortality?

Kambiz Soltaninejad^{*}

Department of Forensic Toxicology, Legal Medicine Research Center, Legal Medicine Organization, Tehran, Iran.

Citation Soltaninejad K. Could the Withdrawal of Opium Tincture from Iran's Addiction Treatment Program Increase Acute Methadone Poisoning and Mortality? *International Journal of Medical Toxicology and Forensic Medicine*. 2026; 16:E53054.

<https://doi.org/10.22037/ijmtfm.v16.53054>

Dear Editor

Iran established one of the largest national opioid agonist treatment (OAT) programs in the world, historically built based on three pharmacological opioid agonist agents: methadone, buprenorphine, and opium tincture (OT). OT is a standardized morphine-based hydroalcoholic preparation that has been particularly favored by patients whose primary drug of choice was traditional opium rather than heroin [1, 2]. OT was introduced explicitly as a culturally acceptable, lower-cost harm-reduction alternative for opium users, and by the early 2020s it had become the second most commonly prescribed OAT medication in the country, serving tens of thousands of patients [2, 3].

In the past two to three years, however, the supply of OT to maintenance treatment centers has become increasingly unstable. Following Afghanistan's 2022 poppy-cultivation ban and the subsequent contraction of raw opium available for licensed domestic OT formulation, Iranian clinicians have reported that treatment centers have been forced to restrict or refuse new admissions to OT programs because of insufficient supply, pushing both new and established patients toward methadone [1]. This supply disruption compounds pre-existing clinical concerns: a recent

commentary on a randomized controlled trial found significantly more adverse events with OT than with methadone, underscoring that the two medications are not interchangeable and that patients switched from OT to methadone may require careful re-titration rather than a simple substitution [4]. Iranian researchers have accordingly begun to frame the shrinking availability of OT as a genuine "threat" to program continuity rather than a peripheral logistical issue [5].

This shift is concerning precisely because methadone-related morbidity and mortality in Iran are already substantial and rising. A national systematic review and meta-analysis reported that methadone was identified as a cause of death in over half of substance-related fatalities referred to Iran's Legal Medicine Organization, and as the sole cause in more than a third of these cases [2]. Hospital-based surveillance in Tehran similarly found methadone to be the single most common drug of abuse implicated in poisoning admissions over a multi-year period, with narcotic and psychodysleptic poisonings carrying the highest in-hospital mortality among all poisoning categories [6]. According to this background, an abrupt, supply-driven influx of OT patients, especially some treatment-naïve to methadone, others unfamiliar with its narrower therapeutic index, slow onset of steady-state levels, and cumulative respiratory-depressant risk during

*** Corresponding Author:**

Kambiz Soltaninejad, PhD

Department of Forensic Toxicology, Legal Medicine Research Center, Legal Medicine Organization, Tehran, Iran.

E-mail: kamsoltaninejad@gmail.com



Copyright © 2025 The Author(s).

This is an open access article distributed under the terms of the Creative Commons Attribution License (CC-BY-NC: <https://creativecommons.org/licenses/by-nc/4.0/legalcode.en>), which permits use, distribution, and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

induction, plausibly represents a scenario that could further increase acute methadone toxicity and overdose deaths. Also, prescription dosing errors during rapid transfer, diversion of excess take-home doses, or self-adjustment by patients habituated to OT's different pharmacokinetics and cultural perception of it as a "milder," herbal-like remedy are other possible causes of poisoning [1, 5].

We therefore wish to draw the attention of editors and readers to this emerging public health risk and to propose several preventive measures.

Protect and diversify OT supply

Health authorities should prioritize domestic opium tincture production and, where feasible, explore additional licensed sourcing, rather than allowing methadone to become a default substitute driven by shortage rather than clinical indication [1].

Structured, monitored transfer protocols

Patients moved from OT to methadone because of supply shortfalls should undergo conservative, symptom-guided induction with close early monitoring, given documented differences in adverse-event profiles between the two agents [4].

Targeted patient and prescriber education

Messaging should correct the misconception that methadone and OT are interchangeable at equivalent "doses," and should specifically address the elevated overdose risk during the first two weeks of methadone induction.

Enhanced pharmacovigilance and toxicological surveillance

Given already-high methadone-attributable poisoning and mortality rates [5, 6], real-time surveillance linking OAT program transfers to poison-center and forensic toxicology data would allow early detection of any rise in methadone-related fatalities associated with the OT shortage.

Take-home dose safeguards

Stricter controls on take-home methadone allocations for newly transferred patients could reduce the risk of accidental pediatric exposure and diversion, both of which are recurrent contributors to methadone-related deaths in Iran.

In summary, the shortage of OT availability within Iran's addiction treatment system is not merely an administrative or supply-chain issue; it carries a plausible, biologically grounded risk of increasing acute methadone poisoning and mortality in a population already disproportionately affected by methadone-related harm.

Conclusion

We urge health policymakers, addiction medicine specialists, and forensic toxicologists to treat this as an active surveillance priority and to implement the safeguards outlined above before, rather than after, an observable rise in methadone-related fatalities.

Conflicts of Interest

The author reports there are no competing interests to declare.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Acknowledgements

The author used Claude (Anthropic, San Francisco, CA, USA) to improve the readability and language of the manuscript. The author reviewed and edited the content as needed and takes full responsibility for the final version of the manuscript.

References

- [1] Pirnia B. Opioid agonist treatment in Iran after an opium poppy ban in Afghanistan. *Lancet Psychiatry*. 2024;11(6):411–2. [DOI: [10.1016/S2215-0366\(24\)00112-3](https://doi.org/10.1016/S2215-0366(24)00112-3)]
- [2] Rostam-Abadi Y, Gholami J, Noroozi A, Rahimi-Movaghar A, et al. Public health risks associated with methadone in Iran: A systematic review and meta-analysis. *International Journal of Drug Policy*. 2022;100:103529. [DOI: [10.1016/j.drugpo.2021.103529](https://doi.org/10.1016/j.drugpo.2021.103529)]
- [3] Omidvar Tehrani S, Rezaei Ardani A, Akhlaghi S, Shayesteh Zarrin M, Talaei A. Long-term detoxification of opioid use disorder with opium tincture assisted treatment. *Front Psychiatry*. 2023;14:1273587. [DOI: [10.3389/fpsyt.2023.1273587](https://doi.org/10.3389/fpsyt.2023.1273587)]

[4] Noroozi A, Rahimi-Movaghar A. Commentary on Nikoo et al.: Challenges in protocol development to optimize outcomes of opium tincture maintenance treatment. *Addiction*. 2023;118(2):295–6. [DOI: [10.1111/add.16106](https://doi.org/10.1111/add.16106)]

[5] Massah O, Radfar SR, Farhoudian A. Opium Tincture in Iran: Opportunity or Threat? *Iranian Journal of Psychiatry and Behavioral Sciences*.

2024;18(2):e145989. [DOI: [10.5812/ijpbs-145989](https://doi.org/10.5812/ijpbs-145989)]

[6] Hadeiy SK, Parhizgar P, Hassanian-Moghaddam H, Zamani N, Khoshkar A, Kolahi AA, Amirabadizadeh A, Rezaei O. Trends of acute drug and chemical toxicities in adults and adolescents in Tehran, Iran between 2012 and 2018: a retrospective chart review. *Drug and Chemical Toxicology*. 2022;45(5):2039–48. [DOI: [10.1080/01480545.2021.1903486](https://doi.org/10.1080/01480545.2021.1903486)]