Delayed non-cardiogenic pulmonary edema after amlodipine overdose: a case highlighting atypical complications

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Introduction: Calcium channel blocker (CCB) overdose typically presents with early hypotension and bradycardia. This case highlights an unusual delayed complication in a 21-year-old female with iron deficiency anemia, depression, and connective tissue disease who intentionally ingested 100 mg of amlodipine.

Case Presentation: The patient presented 2 hours post-ingestion with dizziness, hypotension (98/57 mmHg), tachycardia (HR 103 bpm), and mild fever (37.7°C). Initial management included IV calcium gluconate and hydration. Unexpectedly, 20 hours later, she developed acute hypoxemia and dyspnea. Imaging revealed bilateral pulmonary infiltrates, pleural effusions, atelectasis, and B-lines on ultrasound, with preserved ejection fraction. NT-proBNP escalated sharply (46 → 1701 → 2002 pg/ml). She was managed with diuretics, steroids, and high-flow nasal cannula (HFNC) oxygen, with suspected non-cardiogenic pulmonary edema.

Key Learning Points: Atypical delayed complication: CCB overdose may precipitate late-onset non-cardiogenic pulmonary edema despite initial hemodynamic stabilization.

Role of Biomarkers and Imaging: Rising NT-proBNP with preserved EF suggests non-cardiac strain; lung ultrasound and CXR are critical for diagnosing pulmonary complications.

Multi-Modal Management: Combination therapy (diuretics + steroids) and advanced respiratory support (HFNC) may be necessary for pulmonary edema refractory to standard CCB overdose protocols.

Risk Factors: Underlying connective tissue disease may potentiate inflammatory lung injury in toxin-mediated insults.

Conclusion: This case underscores the need for extended monitoring beyond 24 hours in CCB overdose and demonstrates that pulmonary edema, driven by inflammatory mechanisms rather than cardiac failure, can be a delayed life-threatening complication.

Keywords: Calcium channel blocker overdose, non-cardiogenic pulmonary edema, bedside ultrasound.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this poster presentation.

IRB approval

This poster presentation obtained approval from the Institutional Review Board of Centro Hospitalar Conde De São Januário Research Ethics Committee (0048/MEC/N/2025).