

# Massive Atenolol and Lisinopril Overdose Treated with Hemodialysis, Impella Heart Pump, ECMO and Endoscopic Decontamination

Heise CW MD, Bosak AB MD, Graeme KA MD

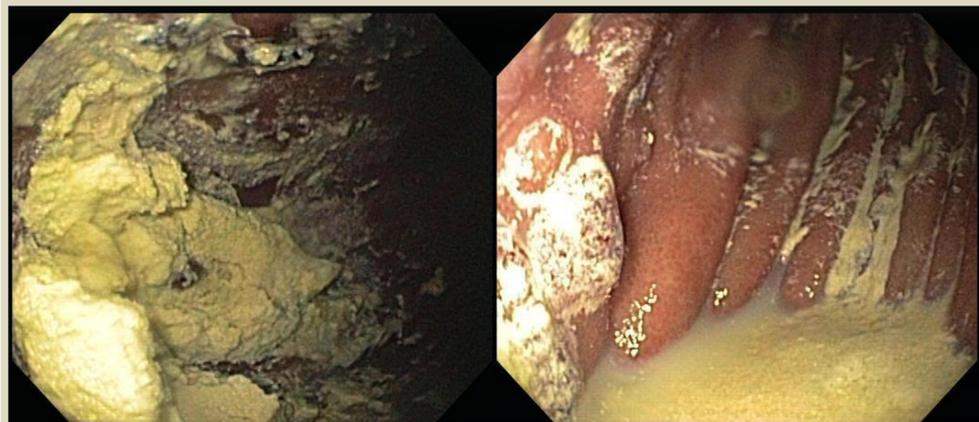
Department of Medical Toxicology, Banner Good Samaritan Medical Center, Phoenix AZ

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## Summary

- Overdose of cardiovascular medications is increasingly associated with morbidity and mortality.
- Aggressive medical intervention with glucagon and vasopressors did not provide sufficient hemodynamic support in this patient with refractory cardiogenic and distributive shock.
- Impella® percutaneous left ventricular assist device and extracorporeal membrane oxygenation used while the effects of the overdose subsided.
- We present levels demonstrating removal of atenolol with CVVHDF.
- First report of esophagogastroduodenoscopy decontamination of this overdose with a large pill fragment burden.

## Photos-Tablets in Stomach



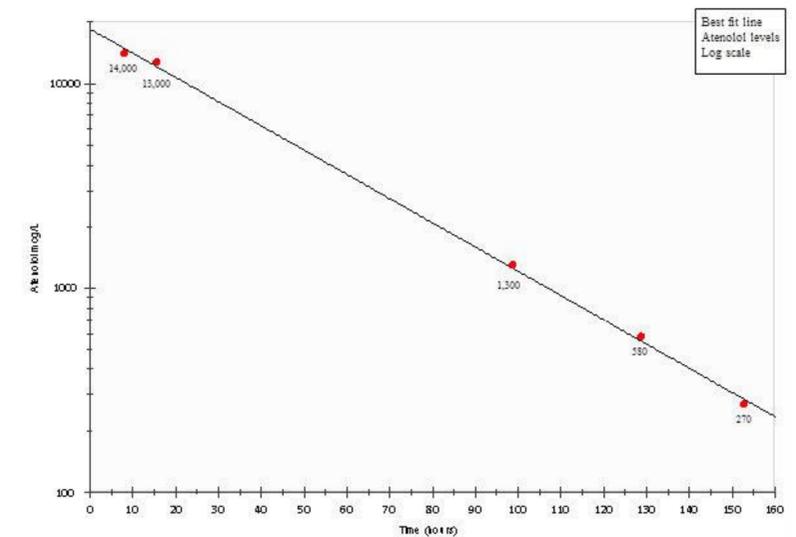
Before irrigation

After irrigation

## Case Report

- Previously healthy 44 yo woman ingests 4.5 grams atenolol, 2.25 grams chlorthalidone, and an unknown amount of lisinopril in a suicide attempt. None were her own medication.
- Profound bradycardia and hypotension require intubation and support to vasopressor infusions of epinephrine 125 mcg/min, norepinephrine 125 mcg/min, phenylephrine 200 mcg/min, vasopressin 0.4 units/min and glucagon 10 mg/hr.
- Heart failure with left ventricular end diastolic pressure of 31 mm Hg noted on heart catheterization, and pacer and Impella® placed 13 hours after ingestion.
- 16 hours after ingestion, EGD is performed with large tablet load removed and activated charcoal injected.
- CVVHDF started at the same time, due to renal failure. Hypotension prevented use of high flux hemodialysis.
- During the next 24 hours, patient continues to decline and cardiac output is almost completely dependent on Impella device for several hours.
- Bradycardia never worsens below HR of 50.
- Hospital day 5, Impella weaned.
- Acute respiratory distress syndrome worsens during the first several days, and veno-venous ECMO is used for 2 days to support oxygenation.
- All vasopressors weaned day 7, extubated day 11.
- Hemodialysis discontinued with return of normal renal function one month after admission.
- Patient has full neurological recovery and is discharged for inpatient psychiatric care and rehab 12 days after admission.

## Graph of Atenolol Levels



## Conclusion

- Patient had continued clinical decline in spite of aggressive supportive care and inotropes.
- Impella percutaneous LVAD first utilized for circulatory support in cardiogenic shock and post-surgical heart failure. Major complications are vascular injury, hemolysis, thrombocytopenia and valve impairment. Our patient had mild hemolysis as the only complication. No RTC has shown mortality benefit for Impella.
- EGD decontamination often recommended for bezoars, but rarely used for direct decontamination. Given massive ingestion, may be helpful to prevent continued absorption.
- Atenolol is removed by CVVHDF.

