

# PERPHENAZINE AND PROPRANOLOL POISONING: A CASE REPORT



@carloalo93

C.A. ALONSO PERALTA<sup>1</sup>, T. GIMENEZ PODERÓS<sup>1</sup>, D. GÓMEZ GÓMEZ<sup>1</sup>, R.M. GONZÁLEZ FRANCO<sup>1</sup>, B. ROGADO VEGAS<sup>1</sup>, J. CASANOVA VÁZQUEZ<sup>1</sup>, M. RIOJA CARRERA<sup>1</sup>, P. DEL RIO ORTEGA<sup>1</sup>, L. PEREZ-PERIAÑEZ ORRILLO<sup>1</sup>, I. ARAGON GRACIA<sup>1</sup>, M. VALERO DOMÍNGUEZ<sup>1</sup>.

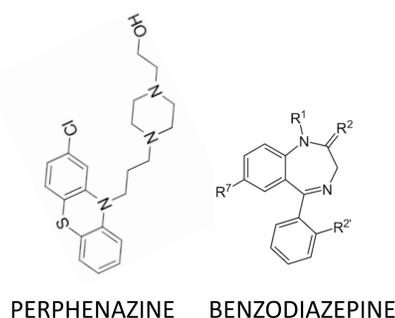
<sup>1</sup>HOSPITAL UNIVERSITARIO MARQUÉS DE VALDECILLA, FARMACIA HOSPITALARIA, SANTANDER, SPAIN.

## BACKGROUND AND IMPORTANCE

The combination of perphenazine, typical antipsychotic, with propranolol, beta adrenergic antagonist, increases the concentrations of both drugs by pharmacokinetic interaction(1).

The main effect of the interaction described is the potentiation of the hypotensive effect.

Typical antipsychotics have an anticholinergic and antihistamine effect that can cause drowsiness, but also have structural similarities with benzodiazepines.



## AIM AND OBJECTIVES

Describe a clinical case of a patient with drug poisoning and the interaction between perphenazine and propranolol and its hemodynamic and central nervous system (CNS) depressant effect.



## MATERIAL AND METHODS

The patient was a **64 years** old woman who was found at home by Emergency Ambulance Service with **Glasgow Coma Scale (GCS) 3**.

Anamnesis showed autolytic attempt.

### Home treatment was:

- letrozole 2.5 mg every 24h orally (OR),
- perphenazine 8 mg every 12h OR,
- losartan 50 mg/ hydrochlorothiazide 12.5 mg every 24h OR,
- propranolol 10 mg every 6h OR ,
- paracetamol 325 mg /tramadol 37.5mg every 8h OR.

During the transfer to the hospital, **flumazenil 1 mg** intravenous (IV) was administered and **GCS change to 9-10**

Patient was admitted to the **Intensive Care Unit (ICU)** due to decreased level of consciousness and hemodynamic instability

**Drug tests** (toxicology screens) on blood and urine were requested.

### Non-pharmacological treatment :

Endotracheal intubation and gastric lavage were performed → **Pinkish content** came out and it was thought to be propranolol tablets traces.

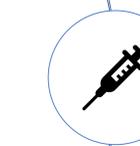
### Pharmacotherapy:

- **dobutamine** was administered at 5 mcg/kg/min IV perfusion (For hemodynamic control), and antidotes:
- **glucagon** was administered at 0.03mg/kg/hour perfusion IV (beta-blockers),
- **flumazenil** bolus 1 mg IV (benzodiazepines) and
- **naloxone** 0.4 mg bolus IV (opioids).

## RESULTS



Drug tests showed positive urine and blood levels of **84.1g/L** for benzodiazepines. In the anamnesis she did not take benzodiazepines.



Dobutamine, glucagon and naloxone were stopped because of test results and hemodynamic improvement.



Flumazenil 1 mg bolus IV was administered again and perfusion flumazenil was started at 0.5 mg/h IV until the level of consciousness was regained and the patient answered verbal orders what happened 4 hours later.

## CONCLUSION AND RELEVANCE

Perphenazine can produce possible false positives to benzodiazepines. The interaction between perphenazine and propranolol can trigger hemodynamic instability and CNS depression, which can successfully manage with dobutamine, glucagon and flumazenil.

## REFERENCES AND/OR ACKNOWLEDGEMENTS

Lexicomp: Interactions. Perphenazine-propranolol[Internet]. Available at: <https://online.lexi.com/lco/action/interact>