
Poster

[P27-6] P27-6: Clinical toxicology (2)

Chair: David William Kinniburgh, Canada

Wed. Sep 27, 2017 12:30 PM - 1:30 PM Annex Hall (1F)

(Wed. Sep 27, 2017 12:30 PM - 1:30 PM Annex Hall)

[P27-6-6] Treatment of a severe amlodipine auto-intoxication

Charles J. C. Geerlings¹, Mathilde van Veggel², Annika M. Smeulders³, Birgit C.P. Koch⁴ (1.Franciscus Gasthuis & Vlietland, 2.Franciscus Gasthuis & Vlietland, 3.Franciscus Gasthuis & Vlietland, 4.Erasmus Medical Center)

Keywords: Intoxication, Amlodipine

Background

A 51 year old female presented to the emergency department with a cardiogenic shock because of an auto-intoxication with 80 tablets perindopril/indipamide (4/1,25 mg) and 30 tablets amlodipine 5 mg. She was given noradrenalin, active charcoal (50 g), calciumgluconate (2,3 mmol Ca) twice and Intralipid emulsion. Laboratory measures/ arterial blood gas analysis at admittance showed:: pH=7,36 -log(H); pCO₂= 1,7 mm Hg; Hb=9,8 mmol/L ; Bic 14 mmol/L; potassium 3,9 mmol/L and lactate 7,8 mmol/l.

She was given insulin 90IE/kg followed by 0,5 IE/kg/, glucose 25g followed by 0,5 g/kg and 3 doses of calciumgluconate 2,3 mmol. The patient developed an acute renal dysfunction and then collapsed. Despite therapy with adrenalin, noradrenalin, enoximon and dobutamine cardiogenic shock was progressive. Extra Corporal Membrane Oxygenation (ECMO) was initiated. The patient was further treated in the Erasmus Academic Medical Centre. Continuous veno-venous haemofiltration (CVVH) was started. The patient developed an acute temporarily hepatic failure, myoclonia and lost the sight in her left eye. ECMO was stopped at day 6, CVVH was stopped at day 19. Discharge at day 57 to a rehabilitation center.

Methods

Treatment for the intoxication was based on the Dutch protocol for treatment of Calcium-antagonist intoxication. This protocol is written in association by Dutch societies of hospital pharmacists, intensive care and Clinical Pharmacology and Biopharmacy in cooperation with the Dutch National Poisoning Center (NVIC)⁽¹⁾. Amlodipine levels were measured with a validated (FDA guidelines) Liquid Chromatography with mass spectrometry detection LC-MS/MS specifications: Thermo TSQ Vantage, range 0,50-400,00 mg/l, solvent 20 % 100 mM ammoniumformiate in milliQ water, 80 % acetonitrile, runtime 6 min., Column 2.1 x 100 mm Waters Acquity UPLC BEH C₁₈ 1.7 m, Column temperature 70 C.

Results

Amlodipine levels were 284, 182, 179, 106, 87 mg/L at day 3, 7, 9, 13 and 14 after intake respectively. Therapeutic levels lay between 0,005 and 0,015 mg/L. Calculated elimination halftime was 127 hours between day 9 and 13 and 84 hours between day 13 and 14. Normal elimination halftime varies form 30 -50 hours.

Conclusions

We treated a patient with a severe auto-intoxication of high dose amlodipine, perindopril and indapamide causing several cardiac arrests. She was treated successfully according to the Dutch intoxication protocol and with ECMO.