A blister of medications was provided: alprazolam 30 mg, amitriptyline 1,250 mg, valproic acid 7,500 mg, and pregabalin 1,500 mg. ECG and lab tests on admission were normal. The plasma concentration of valproic acid was 309 μg/ml, and chest x-ray showed an image consistent with bronchoaspiration.

On June 28, 2016, the patient presented with cardiopulmonary arrest due to ventricular fibrillation and cardiopulmonary resuscitation was performed for 20 minutes. The patient progressed with distributive and cardiogenic shock, requiring high doses of vasoactive drugs.

In view of shock refractoriness, A-V ECMO (Extracorporeal Membrane Oxygenation) for systemic assistance was indicated, reducing the inotropic support and showing slow improvement. On the third day of ECMO support, the patient showed improvement and was progressively weaned from ECMO, which was removed on day 4. Then, mechanical ventilation was removed on day 5, after a short weaning period.

ECMO is a standard technique for the treatment of refractory cardiogenic shock and cardiac arrest induced by drug intoxication. (1) Cardiac arrest may occur during the course of intoxication with psychotropic drugs. Awareness of the severity of a toxic cardiac arrest should allow shortening the times of ECMO indication and placement before the cardiac arrest occurs.

ECMO is a therapeutic tool in cardiotoxicity due to tricyclic antidepressants, since it is a short-term ventricular assist device with easy placement and weaning which provides hemodynamic and systemic support. (2) It also allows the reduction or discontinuation of inotropic agents that perpetuate cardiotoxicity.

The toxic dose of amitriptyline is >5mg/kg; a dose between 10 and 20 mg/kg results in severe toxicity, and >25 mg/kg is lethal. Amitriptyline causes sinus tachycardia, hypotension, ventricular tachycardia and...
fibrillation, and ECG alterations (widening and deformation of QRS and prolonged QT interval). (3)

Intoxication due to tricyclic antidepressants is a severe entity. Resuscitation should be rapid, with gastric lavage and serial activated charcoal; plasmapheresis on hemodialysis is recommended within the first hours, and ECMO should be considered in intoxicated patients experiencing cardiac arrest or severe shock.

ECMO is an ideal support in intoxication due to tricyclic antidepressants, because a short-term assistance provides hemodynamic and respiratory support until intoxication is overcome and inotropic agents are discontinued. (4)

Tricyclic antidepressants are used to treat a wide spectrum of conditions. The pharmacological group of antidepressants is the second most common cause of intoxication, and within this group, tricyclic antidepressants produce greater morbidity and mortality secondary to significant cardiovascular and neurological toxicity. (5) It is very important to keep in mind that, in case of tricycle antidepressant intoxication, referral to a center with ECMO availability should be considered. (6)

Conflicts of interest
None declared.

(See authors’ conflicts of interest forms on the website/Supplementary material).

REFERENCES


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Neonatal Aortic Coarctation

Coarctation of the aorta (CoA) refers to a narrowing of the artery that causes obstruction of blood flow. It is typically located at the insertion of the ductus arteriosus at the origin of the left subclavian artery. It accounts for 8 to 10% of all congenital heart defects with a reported prevalence of approximately 4 per 10,000 live births and a 2:1 male/female ratio. (1) The precise pathogenesis is unknown, but the two main theories for the development of congenital CoA are the reduction of antegrade intrauterine blood flow from the aortic arch causing its underdevelopment, or the migration or extension of ductal tissue into the wall of the fetal thoracic aorta. Pathological examination shows hypertrophy of the middle layer of the posterior wall of the vessel that protrudes into the interior and reduces the aortic lumen. (2) Clini-

Fig. 2. ECMO machine connected to the patient.