

中文題目：以脂肪乳劑治療乙型阻斷劑及鈣離子通道阻斷劑造成的嚴重心因性休克

英文題目：Profound Cardiogenic Shock induced by Beta-Blocker and Calcium Channel Blocker Overdose treated with Intravenous Lipid Emulsion

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Introduction:

Overdoses with beta-blockers (BB) and calcium channel blocker (CCB) present hypotension and bradycardia, leading to significant morbidity and mortality in cases of refractory cardiogenic shock. Intravenous lipid emulsion (ILE) has been administered as a second-line treatment option in these cases if initial therapies failed such as vasopressors, cardiac pacing, or glucagon. We reported the case of 42-year-old woman with intentional overdose of bisoprolol, diltiazem, and amlodipine, successfully treated with glucagon and ILE.

Case report:

A 42-year-old woman with a history of hypertension and arrhythmia took over 20 pills of mixed anti-hypertensive medication as bisoprolol, diltiazem, and amlodipine because of depression with suicide attempt. On arrival emergency room, the consciousness level was alert and oriented but presented with low blood pressure of 64/37 mm-Hg and bradycardia (heart beat of 57 per minute). The electrocardiogram (ECG) revealed interventricular conduction delay (IVCD). She received initial resuscitation with aggressive intravenous fluid following atropine, calcium chloride and glucagon (bolus 3mg). Shock still developed so central venous catheter was inserted for epinephrine and dopamine continuous infusion. She was also intubated for airway protection and admitted to intensive care unit (ICU). We kept continuous infusion with glucagon (3mg/hr) and vasopressor including norepinephrine, epinephrine, dopamine to maintain adequate hemodynamic status. Besides, a temporary transvenous pacemaker (TVP) was inserted for high degree atrioventricular block. The echocardiogram showed a preserved left ventricle systolic function, however, her blood pressure didn't improve under above treatment. Thus, she received a bolus of 250ml 20% lipid emulsion at the 20 hours after overdose. Subsequently, the hypotension resolved gradually and we started to discontinue epinephrine at 5 hours after ILE. The all vasopressors were stopped and she was extubated successfully on the third hospital day. The patient was transferred to the cardiology ward on the fifth hospital day with stable hemodynamic status. She was discharged with out-patient-clinic follow-up on the eighth hospital day.

Conclusion:

We herein report a critical case of intentional overdose of BB and CCB, and emphasize the use of glucagon and ILE. Glucagon is considered the first-line, antidotal treatment for beta blocker poisoning. The ILE has been administered in many lipophilic medication poisoning. Possible mechanisms such as “lipid sink”, surrounding a lipophilic drug molecule and rendering it ineffective, or providing fatty acid to the myocardium as a ready energy source have been reported in literatures. ILE shows effectiveness in this case that failed to multiple conventional therapies with a single and delayed dose. Further studies to determine accurate time and dosage for ILE therapy are necessary. We present this critical case and share our experience with physicians in Taiwan.