**First Case:**

A 60 years old man with 3 Vessel CAD - EF = 30% & risk factors such as HTN – HLP - Opium Addiction and old MI underwent CAGB surgery. After 93 minutes pump time couldn’t be off bypass and went back on CPB for 45” & an addition vein graft again. At last with inotropic support & IABP support transferred to open heart ICU.

After about 6 Hours in ICU & increasing dose of inotropes, heart contraction & blood pressure fall down around 60 – 65 mmHg with high dose of Epinehrin – Dopamin. So there were a symposium about use of ECMO in cardiac & respiratory patients that needed live case to report for spectators in conference hall. An announcement had been done to medical centers for needful patient. When appeared there was a patient with bad condition in ICU, specialist trainers visited patient in ICU & did an Echocardiography to evaluate heart contractility. Patient was in failure & lactat level was going up. Team decided to put patient on ECMO. With a lot of challenges with team and ECMO complications, patient can be off after 4 days with good condition & all process recorded.

**Second Case:**

Aluminium phosphide (ALP) is one of the most commonly used pesticides in Iran causing a high rate of mortality in our. Cellular damage and hypoxia cause cardiac toxicity, resistant hypotension, lung injury and liver failure which are the most common causes of mortality and morbidity after its poisoning. It is an extremely lethal poison releasing phosphine gas upon contact with moisture especially in acidic environments.

**Case Report:**

A 28-year-old male was referred to toxicology emergency department (ED) almost half an hour after ingestion of one and a half 3-g ALP tablets. He had lost his brother a week earlier due to the same poisoning. On arrival, the patient was fully conscious and had stable vital signs although with nausea and vomiting. Silver nitrate test was positive in ED confirming the exposure to phosphide. Nasogastric tube was inserted and gastrointesti- nal washing was performed using the 1/1,000 solution of potassium permanganate. The first venous blood gas (VBG) analysis was normal. Fifty minutes later, he developed hypotension (systolic BP = 60 mmHg) and bradycardia (PR = 30/min), received atropine and was transferred to the toxicology ICU. He was prophylactically intubated, and a jugular CV-line was inserted during which he had atrial fibrillation on cardiac monitoring and electrocardiogram (EKG). On the second VBG, he had a pH of 7.07, pCO2 of 45, HCO3 of 12.8, and base excess of –16.8. A lactate level was reported to be 47 mmol/L, and a tropin-chek confirmed to be positive at 0.1 ng/mL. Acute physiology and chronic health evaluation (APACHE) II and simplified acute-physiology score (SAPS) II were 10 and 29, respectively. The patient was started on routine treatment of ALP poisoning in our centre performed with norepinephrine, calcium gluconate, magnesium sulphate, vitamin E, N-acetyl cysteine and glucose–insulin. However, due to the progression of the patient’s poor clinical condition and deterioration of acidosis, he was considered to be a candidate for V-A ECMO. In the first echocardiogram performed, ejection fraction (EF) was reported to be 20%. Cannulas were inserted and the patient went on ECMO almost four hours after hospital presentation. After 4 day challenges patient could be off ECMO and we got a lot experience with this case.

**Conclusion:**

ECMO is very important program that needs dedicated people who love their job & want to fight with patient – department – medical & team matters. Training & experience helps a lot to be the best. Volunteer countries & centers have guides that are precious. Unprofessional should pay more attention & time to come over their problems. Each case is a course for practicing & learning.