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체외막형산소화요법 이탈에 성공한 심인성쇽 환자에서 예후 예측을 위한 뇌이뇨호르몬의 역할

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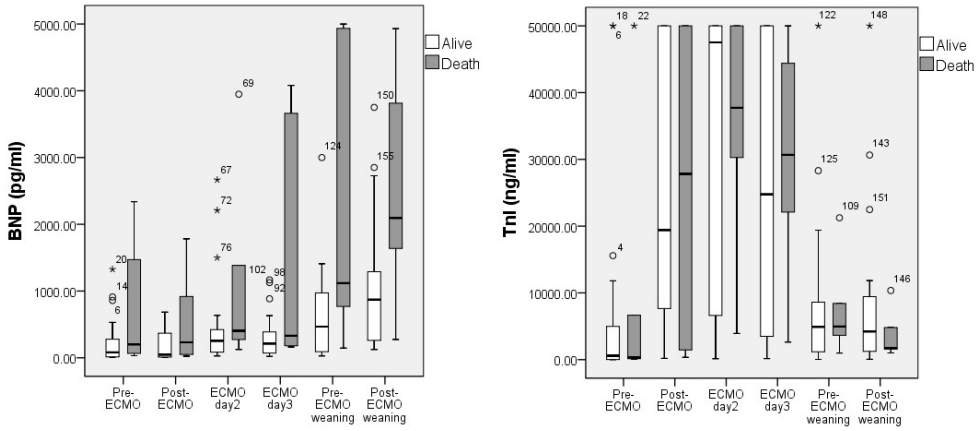
목적: 심인성쇽으로 체외막형산소화요법(Extracorporeal membrane oxygenation;ECMO)치료를 받은 환자에서 뇌이뇨호르몬(Brain natriuretic peptide;BNP)의 역할에 대한 자료는 거의 없다. **대상 및 방법:** 일개 대학병원에서 2015년 1월부터 2017년 12월까지 심인성쇽으로 ECMO 치료를 받고 성공적으로 이탈한 환자를 대상으로, ECMO 시작 전후와 ECMO 이탈 전후의 BNP와 Troponin I 농도를 총 6회 측정하여(On ECMO day1[pre-and post-ECMO initiation], ECMO day2, ECMO day3, and on ECMO weaning day[prior to weaning], and on the day after ECMO weaning) 사망군과 생존군의 차이를 조사하였다. **결과:** 총26명의 환자가 ECMO 이탈하였고(cardiogenic shock, *n*=7; in-hospital cardiac arrest, *n*=13; out-of-hospital cardiac arrest, *n*=6) 나이는 60.5세, 입원시 SOFA score는 10.0점이었다. 15명의 환자가 extracorporeal cardiopulmonary resuscitation(ECPR)을 받았고, 모든 환자에서 primary coronary intervention이 시행되었다. 전체 환자에서 ECMO 치료기간은 9.5일(7.0-12.3일)이었고, ECMO 이탈후 총6명(23.1%)이 사망하였다. 생존군과 사망군 간에 TnI 농도는 모든 시점에서 의미있는 차이를 보이지 않았다. 하지만 BNP 농도 조사에서는 ECMO 삽입 전후로 두 군간 차이가 없었지만 ECMO 이탈 전(467.6 pg/mL[86.0–984.9] vs. 1119.0 pg/mL[613.4–4950.5], *p*=0.039)과 이탈 후(870.7 pg/mL[240.3–1321.8] vs. 2095.5 pg/mL[1297.3–4092.9], *p*=0.039)에 생존군에서 BNP 농도가 의미있게 낮게 유지되었다. **결론:** 심인성쇽으로 ECMO 치료를 받고 성공적으로 이탈한 환자에서 ECMO 이탈 전후의 BNP 농도가 환자의 예후 예측에 중요한 역할을 할 수 있을 것으로 본다.



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Contemporary Management Pattern and Outcome in Patients Without ST Elevation After Cardiac Arrest

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Background/Aims: Current guidelines recommend early coronary angiography (CAG) for out-of-hospital cardiac arrest (OHCA) patients with suspected cardiac etiology of arrest and ST elevation on electrocardiogram (ECG). However, limited is known about the management pattern and outcome in patients who are comatose after OHCA of suspected cardiac origin but without ST elevation on ECG. **Methods:** We conducted an observational study of 197 OHCA patients (147 men; age=57.4±15.6 year-old) without ST elevation on ECG after resuscitation. **Results:** A total of 130 (66.0%) patients had OHCA due to a ventricular fibrillation without ST elevation on ECG. The most common cause of cardiac arrest without ST elevation was coronary artery disease (37.6%). Among them, 71 (36%) patients were treated with targeted temperature management (TTM). CAG was performed in 107 (54.3%) patients. Of these, 62 (31.5%) patients received emergent CAG while comatose and at least 1 significant coronary artery lesion was found in 38 (61.3%) patients. Among them, ECMO and IABP were required in 12 (20.3%). The hospital survival rate was 67.0% (*n*=132) and 101 (76.5%) had a good neurological recovery. Among hospital survivors, ICD was implanted in 34 (25.8%). Patients treated with TTM were more likely to survive to hospital discharge compared to those not treated with TTM (76.1% versus 61.9%, *p*=0.043). Patients who underwent emergent CAG had greater in-hospital mortality compared to those not performed CAG or delayed CAG (45.8% versus 27.5%; *p*=0.013). Patients who needs ECMO (14.3% versus 71.0%, *p*<0.001) and IABP (7.1% versus 71.6%, *p*<0.001) were less likely to survive to hospital discharge. In multivariate logistic regression analysis, TTM (Odds ratio [OR], 0.37; 95% confidence interval [CI], 0.15 to 0.91, *p*=0.032), renal failure (OR, 2.46; 95% CI, 1.09 to 5.51, *p*=0.029), and lactic acid concentration at baseline (OR, 1.18; 95% CI, 1.08 to 1.29, *p*<0.001) was an independent predictor of in-hospital mortality after adjustment for confounding variables. **Conclusions:** In comatose survivors of OHCA without ST elevation, TTM, but not an emergent CAG, is associated with significantly improved in-hospital survival.