Polyethylene Glycol-20K (PEG-20K) is a hybrid cell impermeant that produces non-energy dependent water transfer in the microcirculation and improves microcirculatory flow (MF) during and after low flow states. Our work has demonstrated improved survival and cerebral function in rats treated with PEG-20K during cardiac arrest. Poorly preserved MF contributes to myocardial dysfunction post arrest [1]. The effects of PEG-20K on post resuscitation (PR) myocardial function are unknown. We hypothesized that the administration of PEG-20K during CPR improves PR myocardial function in a rat model of CPR.

Methods

Ventricular fibrillation was induced in 20 male Sprague-Dawley rats and untreated for 6 min. Animals were randomized into two groups (n=10 for each group): PEG-20K and control.

PEG-20K (10%, 2ml) and vehicle (saline) in equal amounts were administered at the beginning of CPR by continuous intravenous infusion [2]. Defibrillation was attempted after 8 min of CPR. Myocardial function was measured by echocardiography at baseline and every hour post resuscitation for 6 hours.

Results

All animals were resuscitated successfully. Post-resuscitation ejection fraction (EF), cardiac output (CO) and myocardial performance index (MPI) were significantly improved in animals treated with PEG-20K (p<0.05, Figure 1).

Conclusions

Administration of PEG-20K following CPR improves PR systolic and diastolic function in addition to cardiac output in a rat model of CPR.

References


Disclosure

None