

LETTER TO THE EDITOR

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# Type of post-cardiac arrest rhythm should not be labelled

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Global resuscitation bodies recommend that when a cardiac arrest victim develops a return of spontaneous circulation (ROSC), they should be treated as per post-cardiac arrest protocol (Perkins et al. 2021). According to the post-cardiac arrest care protocol, the patient's airway should be secured if they do not have an intact sensorium and should not be hyperventilated (target end-tidal CO<sub>2</sub> 35–40 mmHg). If the patient has hypotension [systolic blood pressure (SBP) < 90 mmHg], should treat that with 20–30 ml.kg<sup>-1</sup> bolus of intravenous (IV) fluid, preferably with crystalloid. If hypotension persists even after crystalloid administration, then vasopressor/inotropic infusion can be considered to maintain SBP above 90 mmHg (Link et al. 2015). Once the organised electrical activity returns during cardiopulmonary resuscitation (CPR), the carotid pulse should be checked. If the carotid pulse is absent (in the presence of organised electrical activity), then the patient should be treated as having a pulseless electrical activity (PEA), and the CPR should be continued (Link et al. 2015). If the carotid pulse is present, the patient has obtained ROSC and should be treated as per post-cardiac arrest protocol to prevent the recurrence of cardiac arrest. The possibility of arrhythmias after cardiac arrest is common, and arrhythmias are due to but not limited to ischemia–reperfusion injury, post-cardiac arrest syndrome, dyselectrolytemia, metabolic acidosis

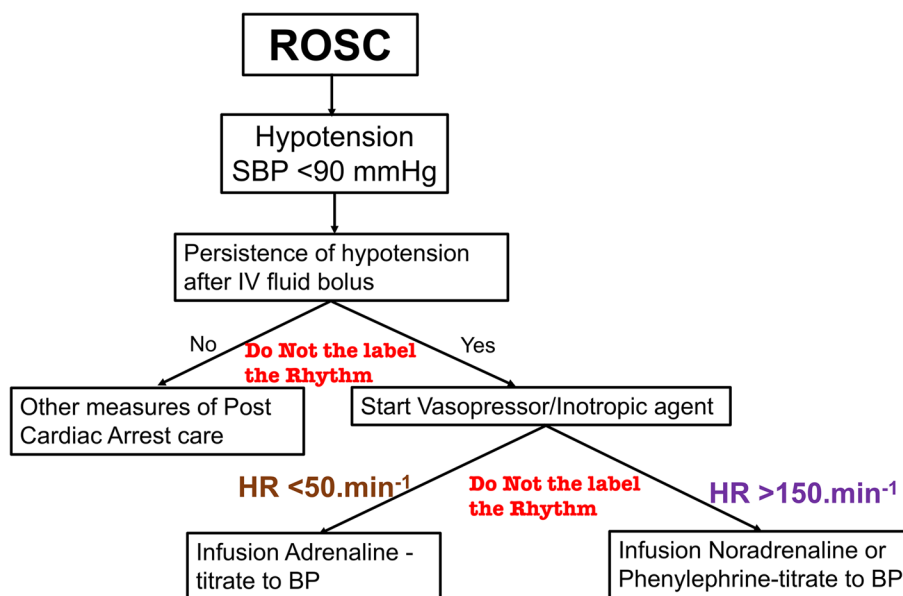
due to coronary arterial disease, and exogenous administration of adrenaline (Bellut et al. 2019; Al-Khatib et al. 2018). Type of heart's rhythm of post-cardiac arrest victims should not be labelled. If hypotension is present after ROSC, that needs to be treated with IV fluids or vasopressor/inotropic therapy. The treatment of choice for stable tachyarrhythmias is pharmacological therapy; for unstable tachyarrhythmias, it is electrical therapy (synchronized cardioversion). The pharmacological treatment for tachyarrhythmias, in brief, includes adenosine (for stable, regular narrow complex tachyarrhythmia),  $\beta$ -blockers, calcium channel blockers (for stable, irregular narrow complex tachyarrhythmia), and amiodarone (for stable, regular wide complex tachyarrhythmia) (Perkins et al. 2021). Labelling the type of heart rhythm which recovered from cardiac arrest may mandate the administration of  $\beta$ -blocker or calcium channel blockers depending upon the type of rhythm of a patient who just recovered from cardiac arrest, and that can lead to the development of recurrent, refractory cardiac arrest (due to blockade of  $\beta$ -receptors). Probable causes for developing cardiac arrest should be recognised (hypoxia, hypovolemia, hypothermia, hypo/hyperkalaemia, acidosis, toxins, cardiac tamponade, tension pneumothorax, coronary, and pulmonary thromboembolism) and treated accordingly, which helps in preventing recurrence of cardiac arrest (Perkins et al. 2021; Link et al. 2015). For a patient with a higher heart rate (HR) > 150 min<sup>-1</sup> with hypotension after ROSC, infusion of an agent which has a lesser positive chronotropic effect (either noradrenaline or phenylephrine infusion) may be considered. In case of hypotension concomitant with bradyarrhythmia (HR < 50 min<sup>-1</sup>), infusions of positive chronotropic agents (adrenaline infusion) should be considered (Fig. 1).

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**Fig. 1** Choosing the appropriate vasopressor/inotropic agent to treat hypotension after recovering from cardiac arrest (rather than treating tachycardia as per the tachycardia algorithm). ROSC: return of spontaneous circulation; BP: blood pressure; HR: heart rate

To conclude, the heart’s rhythm recovered from cardiac arrest should not be labelled. Hypotension following ROSC should be treated with IV fluids, and if it persists even after fluid resuscitation, then vasopressor (for patients with HR > 150 min<sup>-1</sup>) or inotropic agent (for patients with HR < 50 min<sup>-1</sup>) should be started to maintain systemic blood pressure.

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**Abbreviations**

- ROSC Return of spontaneous circulation
- HR Heart rate
- IV Intravenous
- CPR Cardiopulmonary resuscitation
- SBP Systolic blood pressure
- PEA Pulseless electrical activity

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