reaches the coronary circulation in contrast to an intravenous injection of adrenaline in the circumstances of a circulatory arrest.

Reference


eComment: Post CABG cardiac arrest

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doi:10.1510/icvts.2007.171447C

I don’t recommend adrenaline for post CABG arrest [1]. I think it is better to come back to the operating room promptly, if normal condition doesn’t return after primary works. Placement of CPB, examination of grafts and redoing CABG (on pump, beating) is the best option. If grafts are apparently normal, then redo CABG from the most important target vessels (on pump, beating). After each graft we try to be off from CPB. If everything is OK, the chest is closed, if not, other important grafts will begin. I think immediate re-sternotomy for other post cardiac surgery arrest is the procedure of choice if external massage is ineffective.

Reference


eComment: Avoidance of administration of 1 mg of adrenaline in cardiac arrest after cardiac surgery

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doi:10.1510/icvts.2007.171447D

Regarding the administration of (intravenous) epinephrine for the early-post-operative cardiac surgical patient after the fact of the occurrence of complete circulatory arrest [1] I am an agnostic.

That said, I have found i.v. bolus epinephrine can occasionally avert the aforementioned scenario for the patient in a rapid downward ‘death spiral’. In my experience this near-arrest physiology results from abrupt vasodilatory decompensation, for example when suddenly coughing (i.e. valsalva condition) as sedation wears off. And here is the point I would like to emphasize. The crucial form of epinephrine here is the 1 mg/10 cc (usually as a ‘Bristoject’ male leur lock adapter). Push and flush 50 to 100 mg (0.5 to 1 cc) and the patient in jeopardy pulls out of the dive just skimming the treetops.

Push the ‘arrest dose’ of 1 mg/1 cc and as amply noted by others on this concept, the vasodilatory crisis morphs into a hemorrhagic disaster of busted suture line(s) or cannulation site(s).

In summary: Ban the 1 mg/1 cc epinephrine syringes. Keep the 1 mg/10 cc dosage form handy.

Reference


eComment: The moderate use of adrenaline in arrest of patient shortly after cardiac surgery

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Your article [1] is very interesting as it fills a gap of knowledge about the correct administration of adrenaline in postoperative cardiac patients suffering from cardiac arrest. According to the European Resuscitation Council [2] and the American Heart Association [3], a bolus of 1 mg of adrenaline is indicated as soon as pulseless electrical activity or asystole is identified or after the second failed shock, if the rhythm is VF or pulseless VT. The target of this administration is double: firstly to induce ventricular fibrillation or tachycardia (for a successful subsequent defibrillation), and secondly to increase the systemic vascular resistance and restore through this way, a better tissue perfusion. The most important of the targets mentioned above is the first, because the main demand in an asystolic patient in arrest is to retrieve any cardiac activity, even a ventricular fibrillation. However, the second target (to increase the systemic vascular resistance) is achieved much later, either after retrieving a normal rhythm or restoring the circulation by heart massage. In our opinion, adrenaline is indicated ONLY in the patients with no ventricular activity. If ventricular activity is recognized, the so called pulseless electrical activity (ventricular fibrillation or tachycardia), as in the patient in your scenario, the administration of adrenaline does not take place in CPR. Besides, in case of cardiac tamponade, we usually have an empty heart with no myocardial dysfunction, and the rhythm is mostly normal, or later (due to either myocardial hypoperfusion or metabolic acidosis) ventricular fibrillation is observed. In contrast, a myocardial dysfunction with dilatation is observed in case of a rhythm characterized by junctional bradycardia, or asystolia. Especially in the cardiac surgical patient, the asystolic arrest is not rare. Systemic influences that increase extracellular K+ concentration, such as low PO2, metabolic acidosis, renal failure, hypothermia, hemolysis and myocardial trauma, contribute to a partial depolarization of normal or already diseased His-Purkinje system [4]. In this case of arrest, the administration of adrenaline and the abrupt performance of external cardiac massage, may ‘brake down’ the vicious circle until the reopening of sternotomy for a more effective massage. Obviously, after recovery of VT or VF and an unsuccessful defibrillation, administration of 1 mg adrenaline every 3 to 5 minutes is clearly indicated [2, 3]. While the moderate use of adrenaline during post-cardiac surgery arrest is desirable; as we avoid all its adverse effects on the myocardium (increased myocardial oxygen consumption, sustained arrhythmias, and further dysfunction), as well as on the brain (decreased cerebral flow, worsening of brain ischemia) [5].

References