Therapeutic moderate hypothermia: a novel modality for management of electrical storm due to ventricular fibrillation

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A 65-year-old man with hypertension, diabetes, and hypercholesterolaemia presented to our emergency room in 2005 with chest pain. He had severe left anterior descending (LAD) and left circumflex artery (LCx) stenosis and staged hybrid revascularization was performed. Five years later, he developed flank pain followed by chest pain; the latter was associated with anterior ST elevations and repeated episodes of polymorphic ventricular tachycardia (PMVT) and ventricular fibrillation (VF). Angiography showed a proximal LAD occlusion, thrombus within the proximal LCx, and total occlusion of the distal LCx. Balloon angioplasty restored flow to LCx then LAD arteries. Despite intubation, β-blockade, lidocaine, repeated boluses of amiodarone and then procainamide, overdrive ventricular pacing, and an intra-aortic balloon pump, the patient had an additional 38 episodes of PMVT and VF; each was successfully defibrillated. Thoracic spinal anaesthesia was considered; however, it was considered high risk given the recent administration of bivalirudin. Thus, a decision was made to institute therapeutic hypothermia. A target temperature of 33°C was maintained over the next 24 h. Within 1 h of initiation of hypothermia, all ventricular arrhythmias ceased (Figure). We suggest that therapeutic moderate hypothermia be considered in patients with electrical storm refractory to conventional measures.

The full-length version of this report can be viewed at: http://www.escardio.org/communities/EHRA/publications/ep-case-reports/Documents/Therapeutic-moderate-hypothermia.pdf.

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