

by using Dallas criteria. However, EMB seems to be not routinely used for multiple reasons in clinical. Cardiovascular magnetic resonance (CMR) is a valuable noninvasive imaging to diagnose myocarditis at early terms by using Lake Louise Criteria. However, it is limited in FM due to hemodynamically unstable. In the urgent period, echocardiography is most commonly used in suspected FM to exclude other causes of heart failure and for chamber quantification. We aim to emphasize the vital importance of experience with a high index of suspicion leading to early diagnosis. Clinical clues to FM include preceding the onset of symptoms (eg. gastrointestinal or respiratory infection), cardiac enzymes increase, elevated inflammatory markers, and new onset ongoing cardiogenic shock incorporating bedside echocardiogram findings. Treatment of FM remains largely supportive. Steroid and immunomodulating therapy for FM still has controversial according to the literatures.

## CARDIOVASCULAR SURGERY

### GW27-e0090

#### The Role of Heart Rate Management for Cardiac Functional Recovery after Coronary Artery Bypass Grafting Surgery Attacking Electrical Storm

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**OBJECTIVES** To study the role of heart rate management for cardiac functional repair of 56 cases that received coronary artery bypass grafting (CABG) surgery attacking electrical storm.

**METHODS** A total of 56 cases with post-CABG operative electrical storm in our hospital from 2011-01 to 2015-06 were retrospectively analyzed. The pre-operative basic clinical information, in-operative condition and post-operative hemodynamic were summarized in all ones.

**RESULTS** All patients were happened electrical storm who received CABG. However, the different causes of electrical storm were found and the origins of ventricular arrhythmia were located in these cases. They were treated with remove the disease inducement, electrical conversion under continuous ECG monitoring, pacemaker override suppression and intravenous injection of heart rate controlling or combined with anti-arrhythmia medication. Further, 53 cases that including 11 cases depressed cardiac function compared to pre-operative were cured and 3 cases died. The difference is statistically significant between EF, CK, CK-MB, cTnI (95% CI: 1.025 to 1.364,  $P<0.05$ ) and NT-ProBNP ( $P<0.01$ ) in the groups of Pre-attack Electrical Storm and Heart Rate Management after Electrical Storm as well as the groups of Pre-attack Electrical Storm and Pre-operation. The value of cTnI in group of Heart Rate Management after Electrical Storm ( $2.19\pm0.56$ ) (pg/ml) exceeded than the group of Pre-operation ( $0.03\pm0.01$ ) (pg/ml) ( $P<0.05$ ). In addition, factors lead to a racing rate such as smoking and agitation and factors with blood pressure disorder and internal environment disturbance are closely related with electrical storm attacking ( $r=0.517$ ,  $P<0.05$ ;  $r=0.429$ ,  $P<0.05$ ;  $r=0.653$ ,  $P<0.05$ ).

**CONCLUSIONS** Efficient heart rate management could increase the cardiac functional impairment in virtue of electrical storm. We could make the heart rate management as the preferred treatment strategy for electrical storm.

### GW27-e0108

#### Early postoperative anticoagulation after mechanical heart valve replacement: a systematic review and meta-analysis

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**OBJECTIVES** The optimal early postoperative anticoagulation regimen after mechanical valve replacement remains debatable. Our aim was to evaluate the effectiveness and safety of 3 regimens in these patients.

**METHODS** Relevant studies published before Feb. 2016 were collected in several databases and analyzed with Comprehensive Meta-Analysis software version 2.0. Three regimens were defined as follows: a regimen of a vitamin K antagonist (VKA) throughout early postoperative period; a unfractionated heparin (UFH)+VKA regimen using bridging anticoagulation therapy with UFH during early postoperative period; a low molecular weight heparin (LMWH) +VKA regimen using bridging anticoagulation therapy with LMWH during early postoperative period.

**RESULTS** Forty-four studies including 23171 patients were included. The anticoagulation related mortality rates were similar among the three groups. The major thromboembolic event rate was 2.08% (95% CI 1.71%-2.52%) in the group receiving VKA regimen, which was significantly higher than the rate of bridging therapy groups in the UFH+VKA regimen group (0.90%, 95% CI 0.70%-1.16%,  $P<0.0001$ ), and the LMWH+VKA regimen group (0.90%, 95% CI 0.55%-1.45%,  $P<0.0001$ ). The major haemorrhage rate in the UFH+VKA regimen group (2.03%, 95% CI 1.60-2.57) was similar with the group receiving VKA regimen (2.00%, 95% CI 1.64-2.43,  $P=0.937$ ), while significantly lower than the rate of LMWH+VKA regimen group (5.35%, 95% CI 4.42-6.46,  $P<0.0001$ ).

**CONCLUSIONS** In the absence of randomized controlled trials, this meta-analysis including 23171 patients showed that UFH+VKA regimen may be the best early postoperative anticoagulation regimen after mechanical heart valve replacement.

### GW27-e0239

#### Retrograde type a aortic dissection with an entry tear in descending aorta: endovascular repair vs. Open surgery

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**OBJECTIVES** Acute Stanford type A aortic dissection is typically presented as antegrade dissection from a primary intimal tear in the proximal ascending aorta extending to the arch and the downstream distal aorta. However, it may also develop in a retrograde fashion with an intimal tear located in the descending aorta causing retrograde extension of aortic dissection into the ascending aorta, namely, retrograde type A aortic dissection (RTAAD). The optimal management of RTAAD is controversial. This was the first study to compare open surgery to thoracic endovascular aortic repair (TEVAR) in the treatment of RTAAD.

**METHODS** From January 2012 to June 2015, totally 573 patients of acute aortic dissection were admitted in our institute all diagnosed by computed tomographic angiography (CTA). Of them, 30 (5%) clinically stable RTAAD were evaluated. Before September 2013, open surgery (ascending aorta replacement and total arch replacement with stented elephant trunk implantation under cardiopulmonary bypass) was applied in RTAAD (open surgery group, 15 cases). Afterwards, TEVAR was introduced in clinically stable RTAAD (TEVAR group, 15 cases). Coated endovascular stent was implanted through femoral artery. The left subclavian artery (LSCA) was intentionally occluded in 7 patients, reconstructed through hybrid procedure in one, and remained uninfluenced in the rest 7 patients.

**RESULTS** In TEVAR group, all procedures were technically successful, with complete coverage of the entry tear and complete thrombosis of the false lumen in the ascending aorta. No stroke, or paraplegia, or new intimal tear in the proximal ascending aorta, or endoleak, or stent migration was observed during perioperative period and follow up. TEVAR resulted in complete thrombosis of the false lumen, reabsorption of the false lumen thrombus, and enlargement of the true lumen. The mean maximal area of the false lumen in the ascending aorta significantly decreased ( $874\pm161\text{mm}^2$  vs.  $593\pm106\text{mm}^2$ ,  $P<0.01$ ) after TEVAR. At the distal edge of the stent graft, the mean whole area of the descending aorta remained stable ( $710\pm71\text{mm}^2$  vs.  $704\pm67\text{mm}^2$ ,  $P>0.05$ ) after TEVAR.

In open surgery group, one postoperative death occurred due to multiple organ failure. Postoperative complications included respiratory failure requiring mechanical ventilation longer than 3 days in four cases, sever pneumonia in one, acute renal failure in one.

Postoperative morbidity rate (one case, 7%, vs. six cases, 26%,  $P<0.05$ ) and perioperative death (0, 0% vs. one case, 7%) was significantly lower in TEVAR group when compared to open surgery