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ARRHYTHMIA ASSOCIATED WITH ACUTE CORONARY SYNDROME: OCCURRENCE, RISK FACTORS, THERAPY AND PROGNOSIS: A SINGLE-CENTRE STUDY

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Objectives Arrhythmia associated with acute coronary syndrome is a common phenomenon. Careful investigation on its occurrence and risk factors in this progressed clinical scenery may lead to further standardisation of therapy and improvement of prognosis. Thus we retrospectively analysed the year-round data of our centre and attempted to provide more information.

Methods Patients admitted to our centre with final diagnose as acute coronary syndrome from January 2007 to December 2007 were enrolled consecutively and analysed.

Results

1. A total of 431 patients were enrolled, with average age of 69 and males accounted for 66.8%, including 98 cases of ST-segment elevation myocardial infarction (STEMI) (22.7%), 109 cases of non ST-segment elevation myocardial infarction (NSTEMI) (25.3%), 224 cases of unstable angina (UA) (52%). A total number of 99 cases/times of arrhythmia were recorded, accounted for 23% of whole population. Among these were 83 supraventricular tachycardia (19.3%), 41 atrial flutter/fibrillation (9.5%), 49 ventricular premature complex (11.4%), 9 ventricular tachycardia/fibrillation (2.1%), 5 sudden cardiac death (1.2%), 20 sinus bradycardia/junctional escape rhythm (4.6%) and 17 Morbitz II degree and above atrioventricular block (3.9%).
2. Significant different incidences of arrhythmia were detected between STEMI, NSTEMI and UA groups (respectively 41.8%, 24.8% and 13.8%, $p<0.001$). Advanced age (≥65 years old), history of COPD or chronic renal dysfunction, complicated with infection, respiratory failure, elevation of cardiac injury biomarkers and symptomatic cardiac dysfunction were associated with increased incidence of arrhythmia (all $p<0.05$). In Logistic analysis, advanced age (≥65 years), elevation of cardiac injury biomarkers and symptomatic cardiac dysfunction were independents risk factors of arrhythmia (adjusted OR, 95% CI 2.203 (1.231 to 3.941), $p=0.008$; 2.998 (1.777 to 5.059), $p=0.000$; and 4.422 (1.944 to 10.058), $p=0.000$).
3. Compared with patients without arrhythmia, ACS patients with arrhythmia were older, more of whom have history of chronic renal dysfunction, COPD, and more complicated with infection, respiratory failure. Further, they were more suffered from abnormal left ventricular wall motion, more received revascularisation, IABP, mechanical ventilation and temporary transvenous pacemaker support (all $p<0.05$). The proportion of aspirin and β-blocker therapy were lower, whereas proportion of tirofiban, dopamin, dobutamin, digitalis, nitroprusside, nitrates and diuretics therapy were higher (all $p<0.05$). When discharge from hospital, fewer these patients received aspirin, ACEI/ARB, but more received diuretics (all $p<0.05$). Arrhythmia significantly increased adverse events such as re-infarction, haemodialysis and death in ACS patients (unadjusted OR, 95% CI 4.134 (1.356 to 12.603), $p=0.014$; 6.239 (1.787 to 21.778), $p=0.004$; 11.310 (3.560 to 35.935), $p=0.000$). Length of stay in hospital were extended for about 5.4 days ($p=0.004$).

Conclusions Arrhythmias associated with ACS are common, and may be relate to more complicated comobidity and more severe impairment of myocardium, all of which indicated a more feeble clinical status and lead to a poorer prognosis. With advancement of modern techniques, we now provide more support to these patients. However, standardised chronic medicine treatment such as β-blocker and/or ACEI/ARB with evidence to improve prognosis were underused. More attention should be paid to these patients to improve their treatment and prognosis.