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CHANGES OF ELECTROCARDIOGRAM AND CK-MB IN THE PATIENTS WITH CEREBRO-CARDIAC SYNDROME CAUSED BY ACUTE CEREBRAL INFARCTION

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Objectives To investigate the changes of ECG activity and CK-MB in the patients with cerebro-cardiac syndrome caused by acute cerebral infarction and to analysis the relationship between ECG, CK-MB and the site of lesion, the area of infarction.

Methods To study ECG changes and CK-MB elevation of 126 patients with cerebro-cardiac syndrome caused by acute cerebral infarction. According to CT and MRI, it was divided to three groups. large area of infarction group (infarct diameter >3.0 cm), lacunar infarction group (infarct diameter <1.5 cm) and other group (1.5 cm< infarct diameter <3.0 cm). And clinical date of different injury parts was analysed. We analysed the ECG respectively in the different site of injury include lobes of the brain, the thalamus, basal ganglia, brain stem, cerebellum, and corona radiata. And ck-mb in serum was detected meanwhile.

Results 135 patients with cerebro-cardiac syndrome, 82 (60.7%) had abnormal ECG and the incidence of abnormal ECG caused by cerebral infarction in lobes of the brain, the thalamus-basal ganglia, brain stem, cerebellum and corona radiata is 11 (61.1%), 26 (74.5%), 21 (70%), 6 (66.7%), 18 (42.8%) respectively. The incidence of abnormal ECG has no obvious differences among the site of lobes of the brain, the thalamus-basal ganglia, brain stem and cerebellum. But the incidence of ECG in corona radiata was lower than all of them ($p<0.01$). The abnormal ECG expression is varied. arrhythmia appears in 57 patients, ST changes in 38 cases (26.7%) and left room high voltage has in 36 cases (20%), bundle block appears in 23 patients (12.8%) and QT prolongation was found in 16 cases (8.9%). arrhythmia and ST changes are more frequency than other abnormal ECG. There are 32 patients in the group of large area of infarction and 28 patients in the group of lacunar infarction and 22 patients in the other group. Compared them each other, we found that large area of infarction group has higher rate of abnormal electrocardiogram than lacunar infarction group and

other group. There has more differences among them ($p<0.05$). Abnormal CK-MB increase was in 65 (48.1%).The part of the brain damage was related to the site near the basal ganglia and thalamus lesions of its high rate of abnormal CK-MB. Meanwhile, large area of infarction group has higher rate of CK-MB than lacunar infarction group and other group. Patients with abnormal ECG had higher incidence of CK-MB elevation ($p<0.01$).

Conclusions: Discussion Early abnormal electrocardiogram changes and the increase of the abnormal CK-MB occurs in cerebro-cardiac syndrome and it related with the part and the area of the acute cerebral infarction. The most common abnormalities of ECG changes after the acute cerebral infarction was arrhythmia and ST changes. Patients with poor outcome had higher incidence of ECG changes and CK-MB elevation than patients with good outcome.