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TORKAMOL HUNSAVONG: THE EFFECTS OF ELECTRICAL
 STIMULATION ON THE FIBRINOLYTIC ACTIVITY IN RATS AFTER
 CEREBRAL ISCHEMIC INSULT. THESIS ADVISORS: KANOKWAN
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The present study was performed to examine . 1) the serial changes in fibrinolytic activity (euglobulin lysis time; ELT) in rats before and after permanent occlusion of right common carotid artery and 2) the effect of electrical stimulation on the fibrinolytic activity and on the attenuation of ischemic neuronal damage in rats after arterial occlusion. *Methods*: A total of 89 male Sprague Dawley rats weighing 380-500 g. were used. The animals were randomly assigned into two groups: the control and the treatment. Global cerebral ischemia was induced by permanent occlusion of right common carotid artery. Animals in the control group were subjected to global cerebral ischemia with no treatment. Animals in the treatment group after induced cerebral ischemia were subjected to electrical stimulation by inserting subcutaneously two pairs of needle electrodes at cervical region twice a day for 4 days. Blood samples of all rats were collected to measure ELT at one day before and one hour (day 0), day 1, day 2 and day 3 after arterial occlusion. At the 5th day after arterial occlusion, the brains were removed and processed for histological examination. *Results*: The serial changes of the mean ELT (mean±S.E.M) (minutes) before and after arterial occlusion were 130.9±7, 134.7±11.88, 301.8±30.65, 379.5±28.1, and 275.8±16.7, respectively, but there was no significant difference between ELT before and after arterial occlusion. Estimation of the effect of electrical stimulation on the attenuation of ischemic neuronal damage was assessed by comparing the number of neuronal death per 1 mm³ (N_V) of the cortex and per 1 mm² of specific brain region (N_A) between the control and the treatment groups. The mean N_V (mean±S.E.M) of the right and the left hemisphere of the control group were 9126±1841 and 6893±1746, respectively, while the N_V in the treatment group were 3780±1011 and 2178±464, respectively, which were significantly lower than the control group (P<0.05). The mean N_A of the right retrosplenial and the left temporal, perirhinal and entorhinal areas of the treatment group was significant lower than the control group (P<0.05). However, electrical stimulation has no effect on the fibrinolytic activity after arterial occlusion. *Conclusion*: The present results indicate that there is a tendency to impair the systemic fibrinolytic activity after arterial occlusion. Electrical stimulation may help in attenuation of ischemic neuronal damage. However, electrical stimulation has no effect on the fibrinolytic activity after arterial occlusion. Further studies with more specific test of fibrinolytic activity are necessary to clarify whether electrical stimulation has any effects on the fibrinolytic activity after arterial occlusion.