

Role of time-and-frequency parameters of a high-voltage electric pulse generated by electroshock device in development of a convulsive syndrome

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As a result of the conducted experimental studies it has been established, that local impact of the pulsed electric current causes development of clonic and tonic type convulsions depending on impact pulse repetition rate and duration. Irrespective of impact pulse parameters changes in the functional status and an emotional condition of experimental animals that is shown in change of their impellent activity, vocalization, etc. are observed.

During the first stage of the study the specially developed high-voltage pulse generator was used which allowed varying the pulse repetition rate wide-ranging, changing the pulse shape and other parameters of impact at the constant impact power of 30 W.

The data obtained for the impact duration equals to 100, 250, 500 and 1000 ms, shows, that the development of a convulsive syndrome is observed at exposition duration of 250 ms and longer. During the 500 or 1000 ms expositions loss of consciousness and orientation, presence of tonic and clonic type convulsions and dyspnoea are observed both at the time and after the impact.

Thus, the use of a powerful high-voltage pulse generator makes possible the exposition duration reduction till 500 ms that allow increasing efficiency of electroshock devices sharply in the force confrontation situations.

Key words: electroshock device; pulse repetition rate; exposition duration; convulsions; dyspnoea