

Investigation the activity of potassium channel on Convulsion induced by Atropine in fasting mice after food intake

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Abstract

Epilepsy is considered a popular neurological disorder, characterized by disorder in electrical activity which is located in the brain area and well-known as epileptic seizures. This study aimed to establish the pharmacological effect of the minoxidil which consider as a potassium channel opener on the atropine that induced convulsion in fasting animal for 24 hours after allow to access the food. In current studies, Atropine was suggested that produce convulsion in fasting animals through decreased cholinergic action caused by blockade of muscarinic postsynaptic receptors because of their anticonvulsive activity. Minoxidil is considered as a strong arteriolar vasodilator (powerful vasodilator) because of its acting as a potassium channel opener which is present on the cells of the smooth muscle of the peripheral.

Materials and Methods: After 24 hours fasting mice were divided into 3 groups each one contains animals which were first treated normal saline solution, 25 or 50 mg/kg of minoxidil, 10 minutes later 2.4 mg/kg atropine was injected, another group were injected just 2.4 of atropine, and the last group was the control group. For twenty minutes after atropine injection, putting the food in the cages was done and allowed the animals to start eating. All animals were observed for 30 minutes and the duration and frequency of convulsion onset were evaluated, Open field and Rota rod apparatus were used after atropine administration to evaluate motor coordination, exploration behavior, and muscle relaxation.

Result: injection of minoxidil before atropine wasn't effecting in prevent the convulsions developed, in fasted animals after food access and atropine injection. seizure onset time was significantly higher in the minoxidil+ atropine group ($p < 0.05$) when minoxidil groups were compared with the atropine group. While between the groups, there was no difference ($p > 0.05$). beside open field and Rota rot results were shown insignificantly influence.

Conclusion: It was concluded from this study that the use of the above drugs in the prevention of convulsion resulting from the use of atropine in mice was not effective except for minoxidil which has an effect as a delay at the time of the seizure.

Biography

AL-Hajjar Taha Safauldeen Taha currently pursuing his bachelor's degree in the Van Yuzuncu Yil University, Turkey.



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