

16th Global Diabetes Conference & Medicare Expo

March 22-23, 2017 Rome, Italy

Inductor of neurotrophic factors, 4-methylcatechol, exerts antidiabetic effects

S Yagubova, K Taraban and R Ostrovskaya

V V Zakusov State Institute of Pharmacology, Russia

4-methylcatechol (4-MC) was reported to increase the content of nerve growth factor (NGF) and brain-derived neurotrophic factor (BDNF). Proceeding from the data on neurotrophic factors deficiency in pancreatic beta-cells as important pathogenetic factors of diabetes, we studied the effects of 4-MC on streptozotocin (STZ) induced model of diabetes on Wistar male rats. Animals were divided into 5 groups: passive control (saline), active control (saline+STZ), group of prophylaxis (Pro: 4-MC+STZ), group of treatment (T: STZ+4-MC) and group of combined administration (PT: 4-MC+STZ+4-MC). 4-MC was used in doses of 10 mg/kg for 14 days, STZ as a single injection 45 mg/kg i.p. 4-MC reduced the STZ-induced hyperglycemia, its effect was more pronounced in case of preventive administration, while in passive control we got glucose level 6.83 ± 1 , STZ increased it up to 17.38 ± 2.19 ($p < 0.05$). Pro group demonstrated glucose level 8.97 ± 0.76 ($p < 0.05$ compared to active control). STZ decreased the percentage of the animals ability to reach the active avoidance criterion to 36.4% from 71.4% in the passive control; rats pretreated with 4-MC successfully learned in 57%. Data obtained demonstrate 4-MC ability to attenuate the hyperglycemia and cognitive deficit caused by diabetogenic toxin STZ.

Biography

S Yagubova is currently working with the group of V V Zakusov Institute of Pharmacology, Moscow, Russia. This group is working with the problem of neurotrophic factors insufficiency in the pathogenesis of diabetes and accompanying by behavioral disorders. Their correction with original peptide mimetics of NGF and BDNF designed in this Institute is also in the focus of this group activity.

syagubova@yandex.com

Notes: