Venlafaxine induces neurogenesis in frontal cortex and nucleus accumbens of albino mice exposed to chronic mild stress-induced anhedonia

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The aim of the present study is to assess the neurogenesis effect of venlafaxine in the frontal cortices and nucleus accumbens of mice exposed to chronic mild stress (CMS) for 3 weeks. Mice were divided into three groups: Group (1) was control,non stressed, saline- treated mice, group (2) was control exposed to chronic mild stress, saline- treated mice and group (3) was treated by venlafaxine in dose of 8 mg/kg/day during exposure to chronic mild stress for another 3 weeks. The following parameters were measured at the end of the 6th week of the study: sucrose consumption & serum corticosterone in mice as indicators for induction of stress, brain derived neurotropic factor [BDNF] level in the frontal cortex and nucleus accumbens of mice as a marker of neurogenesis. The results showed that administration of venlafaxine ip to mice exposed to CMS produced significant ($p<0.05$) decrease of the serum corticosterone level in mice compared to stressed & saline-treated group (2). Additionally, significant ($p<0.05$) increase in BDNF concentration in both frontal cortices and nucleus accumbens of stressed mice compared with both control and stressed non-treated groups (1&2). Th e results of the present work provide an evidence for potential neurogenesis effect of venlafaxine which might add benefits to its therapeutic use in treatment of depressed mood.

Biography

Sahar Mohamed Kamal is currently an Associate Professor in the Department of Pharmacology at Ain Shams University, Egypt. Dr. Kamal research interest includes GABAergic and glutamergic effects of drugs acting on CNS, Neurogenesis and neuroplasticity that would promote the improvement done by antidepressants and antipsychotics in treatment of depression and psychosis