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EW0752

Selective serotonine reuptake inhibitors or dual antidepressants and syndrome of inapropriate antidiuretic hormone secretion: A systematic search

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Introduction Depression is a disease with high prevalence all over the world. Selective serotonine reuptake inhibitors (SSRIs) and dual antidepressants (DA) are worldwide used to treat the different types of depressive episodes. Between the adverse events of these compounds, an unusual but potentially severe side effect is the syndrome of inapropriate antidiuretic hormone secretion (SIADH).
Results and discussion Several cases published, and an amount of cases series have documented the association of SIADH to the use of SSRIs and DA. All SSRIs and DA are at risk of producing SIADH (fluoxetine, paroxetine, fluvoxamine, sertraline, citalopram, escitalopram, venlafaxine and duloxetine). Old age has been found as a risk factor for developing SIADH. There are not enough data to conclude that other risk factors can play a role in the development of this adverse event. Treatment should include the immediate withdrawal of the antidepressant. The introduction of other antidepressants is controversial, as SIADH has been related with all antidepressive treatments; but the risk of relapse into a depressive episode must be considered also. Between symptomatic treatments, the control of water intake and the use of low doses of loop diuretics can be recommended. Severe cases can be treated with higher doses of loop diuretics and saline hypertonic solution.
Conclusions SIADH has been related with SSRIs and DA antidepressants and it is an infrequent but severe adverse event. Its risk must be considered when prescribing treatment with them. If this adverse event is produced, the substitution of the antidepressant should be done.
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EW0753

Anti-inflammatory properties of brilliant blue G on chronic unpredictable mild stress-induced changes in rat hippocampus

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Objective Purinergic 2X7 receptor (P2X7R) activation has recently been considered to be involved in depression at least partially by triggering microglial activation. The aim of the present study was to examine whether the chronic administration of brilliant blue G (BBG), a highly selective P2X7R antagonist, has antidepressant-like effects and microglial (Iba-1) immunoreactivity in chronic unpredictable mild stress (CUMS) model in rats.
Methods Male Wistar Albino rats (290–360 g) were divided into groups such as control (saline), CUMS, CUMS + Imipramine (20 mg/kg; i.p.), CUMS + BBG25 (25 mg/kg; i.p.), CUMS + BBG50 (50 mg/kg; i.p.) groups (n = 10–12 in each). In CUMS model, various stressors were applied for 40 days. On day 20, the treatment of BBG was started for 20 days. At the end, sucrose preference and forced swimming tests were performed. Then brains were removed with paraformaldehyde perfusion for Iba-1 immunohistochemical analysis in hippocampus. One-way analysis of variance and Tukey's test were used for statistical analysis.
Results The time of immobility in forced swim test was significantly reduced while sucrose preference was increased in Imipramine and CUMS + BBG50 groups compared to control and

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CUMS groups, respectively. In immunohistochemical experiments, Iba-1 was overexpressed in CUMS group and BBG significantly reduced the overexpression of Iba-1.
Conclusion Our results suggest that chronic administration of BBG has an antidepressant-like activity supporting the notion of P2X7 receptors involvement in depression by modulating microglial activation.
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EW0754

Harmane suppresses microglial neuroinflammatory response and induce antidepressant-like effect in rats

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Objective Harmane is a beta-carboline, which binds to imidazoline receptors and it has been previously shown that it may have an antidepressant effect when administered acutely. This study is planned to investigate the effect of harmane on chronic unpredictable mild stress (CUMS) model and microglial (Iba-1) immunoreactivity in the same model as markers of neuroinflammation.
Methods Male Wistar Albino rats (290–360 g) were divided into groups such as control (saline), CUMS, CUMS + Imipramine (20 mg/kg; i.p.), CUMS + Harmane5 (5 mg/kg; i.p.), CUMS + Harmane10 (10 mg/kg; i.p.) groups (n = 10–12 in each). In CUMS model, various stressors were applied for 40 days. On day 20, harmane administration was started for 20 days. At the end, sucrose preference and forced swimming tests were performed. Then, brains were removed with paraformaldehyde perfusion for Iba-1 immunohistochemical analysis in hippocampus. One-way analysis of variance and Tukey's test were used for statistical analysis.
Results The time of immobility in forced swim test was significantly reduced while sucrose preference was increased in Imipramine and CUMS + harmane10 groups. In immunohistochemical experiments, Iba-1 were overexpressed in CUMS group and Harmane significantly reduced the overexpression of Iba-1.
Conclusion Our results suggest that chronic administration of harmane has an antidepressant-like activity in chronic stress model of depression. These results support the notion of imidazoline receptors involvement in depression by modulating neuroinflammation and at least a part of its antidepressant effect might be through modulating microglial activation as a reflection of neuroinflammation.
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EW0755

Investigation of chemical interactions of small peptides and vitamin substances at the developed dopamine D2 receptor models

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Introduction Dopamine receptors perform various functions essential to vertebrate central nervous systems and they are the major targets of antipsychotic drugs. Our recent studies pioneered to perform molecular modeling studies of the dopamine D2 receptor (D2R), describing the mechanism and binding affinities of marketed antipsychotics into the active sites of the $D2^{high}R$ and $D2^{Low}R$ [1]. Another study provided significant information about changes of binding cavity properties of D2R [2].
Objectives Since the marketed antipsychotics have serious side effects, we aim to explore ligands with better inhibition profiles on D2R with less unwanted outcomes. For this aim, we compare the effectiveness of the marketed drugs with small peptides and vitamin substances.
Aims The main goal of the research is to explore novel small molecules that inhibit D2R to be used in schizophrenia.
Methods In this study, we used a large number of endogen vitamins and peptides with dopamine D2R active-inactive forms in monomeric-dimeric patterns to understand their interactions at the active sites of targets. Nineteen of antipsychotic drugs, which are widely used in schizophrenia treatment are selected as reference molecules. Molecular docking, molecular screening and molecular modeling approaches were used.
Results Some of these endogen molecules showed similar or better inhibition profiles on D2R compared to the known standard inhibitors of the target.
Conclusions Proposed molecules may be potent for D2 receptor inhibition with less side effects for the use for schizophrenia.
Disclosure of interest The authors have not supplied their declaration of competing interest.
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EW0756

Pharmacodynamic targets of psychotic patients treated with a long-acting therapy

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Introduction Given the poor compliance of schizofrenic patients to antipsychotic therapies, are been developed drugs in long-acting formulation that for their pharmacokinetic ensures prolonged therapeutic activities. Currently, we consider that their efficacy depends on hereditary tracts, influencing both pharmacodynamic and pharmacokinetic parameters.