

EPV0534

The sublingual use of atropine in the treatment of clozapine-induced sialorrhea

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Introduction: Clozapine is a second-generation antipsychotic indicated in treatment-resistant schizophrenia. Patients taking clozapine are likely to experience an increase in salivation or sialorrhea. Clozapine-induced sialorrhea (CIS) may lead to sleep disturbances or aspiration pneumonia. Treatment options include locally administered anticholinergic medication with atropine ophthalmic drops applied sublingually.

Objectives: To review the current evidence for the effectiveness, safety, side effects and dosage of sublingual application of atropine in reducing or resolving of CIS.

Methods: Systematic review. Data were obtained from PubMed/Medline, EMBASE, PsycINFO, Cochrane Plus, Trip Database, Science Direct and Scopus searches of English-language articles, without restriction for date of publication and study design, reporting the sublingual use of atropine in the treatment of CIS. Large clinical studies with appropriate statistical methods and recruited adults were preferred.

Results: 12 selected articles (of 458 references) consisted entirely of case reports and case series. A total of 29 patients with CIS were reported, of whom 24 responded favorably to sublingually administered atropine drops 1% (1-2 drops a day). One limitation of its utilization is the dose-related dry mouth, which can be addressed by lowering the number of drops administered. CIS can occur at different clozapine doses, in various stages of treatment.

Conclusions: The reviewed articles suggest that the use of sublingual atropine is a promising local treatment for CIS. Oral anticholinergic and alpha-2 agonist medications have been used to treat CIS with variable efficacy, but can cause systemic anticholinergic side effects. Further experimental research is needed.

Disclosure: No significant relationships.

Keywords: CIS; sublingual atropine; clozapine-induced sialorrhea

EPV0535

Therapeutic use of psychedelic drugs in depression disorders

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Introduction: Depression is one of the most prevalent mental illnesses, leading to important personal distress and economic consequences. Treatment is long, often involving psychotherapy and pharmacological treatment, and relapses are frequent. Used mostly for treatment of mood disorders and alcohol dependence, drugs such as lysergic acid diethylamide (LSD) were studied in the 1950's and showed therapeutic promise in attenuating depressive symptoms. However, in the 1960s all major psychedelic research

programs were ended. Recently, there is a renewed research interest in these drugs, considering its antidepressant potential.

Objectives: To review current knowledge on the therapeutic uses of psychedelic drugs such as LSD in depression disorders.

Methods: Review of the most recent literature regarding the therapeutic potential of psychedelic drugs such as LSD in depression disorders. The research was carried out through the UptoDate, PubMed, MedLine, ScienceDirect and SpringerLink databases, using the terms “LSD”, “psychedelic drugs” and “depression disorders”, until December 2020.

Results: As in past scientific studies, data of recent clinical research shows that the use of LSD relieves distress concerning death, particularly in terminally ill oncologic patients, and addictions including alcoholism and nicotine. There is more limited data concerning the use of classic hallucinogens to treat depression and anxiety disorders.

Conclusions: Although research has shown many of the neurobiological and psychological effects of classic hallucinogens on humans, the studies that have been completed to date are not sufficient to establish clinically relevant effects. Despite further research is needed, the outcomes are encouraging, and larger, well-designed, placebo-controlled trials are now underway or being planned.

Disclosure: No significant relationships.

Keywords: depression disorders; psychedelic drugs; LSD; Psychopharmacology

Psychophysiology

EPV0536

Extrapyramidal symptoms as a consequence of organophosphate poisoning: Insights from a clinical case

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Introduction: The development of an extrapyramidal syndrome (EPS) is assumed to be a potential and important consequence of organophosphate poisoning (OP). Even though its causal relationship is firmly established, the information available in the literature regarding the orientation to be given is scarce, and its approach remains shrouded in a significant degree of uncertainty. Catatonia, as a neuropsychiatric condition, may present a marked overlap with the set of extrapyramidal symptoms developed after OP. Does the overlap between the symptoms seen in catatonia and in EPS make differential diagnosis fundamental or does it have no relevance in relation to the approach to be established?

Objectives: To discuss the therapeutic approach to be implemented in the extrapyramidal symptoms resulting from OP and reflect on the overlap between catatonia and EPS.

Methods: Presentation of a clinical case and review of the literature.

Results: A 50-year-old woman with major depressive disorder developed a condition marked by exuberant extrapyramidal symptoms 3 weeks after OP. Significant stiffness, tremor, dysphagia and facial hypomimia were some of the symptoms observed. Therapy was started with amantadine 100mg daily, with complete resolution of the symptoms after 5 days. Follow-up revealed reversal of extrapyramidal symptoms, in the absence of any neuroimaging changes or any other neuropsychiatric manifestations.

Conclusions: The possible overlap between catatonia and EPS is remarkable. The two conditions, regardless of their differentiation, may benefit from an identical approach using dopaminergic drugs. The use of amantadine, even in low doses, may be an option in the rapid reversal of extrapyramidal symptoms resulting from OP.

Disclosure: No significant relationships.

Keywords: organophosphate poisoning; extrapyramidal symptoms; extrapyramidal syndrome; Catatonia

EPV0542

Effects of the moderate stress exposure on the short-term memory capacity: An experimental study in fire cadets

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Introduction: Future firefighters are selected and trained to perform well under pressure and stress.

Objectives: The research is focused on the experimental study of fire cadets' memory capacity under stress.

Methods: The study follows Solomon Four Group Design with two variables: stress stimuli (exposure/non-exposure), fire cadets (n=50)/civilian students (n=40). Two series of The Digit Span Test measurements (DST) were performed. Heart rate, EMG, systolic wave amplitude, pulse transit time were measured during the experiment to determine the respondents' stress levels.

Results: Memory capacity in fire cadets under stress (n=30) significantly increased (Wilcoxon match-pairs rank test, $p = 0.001$; 1st DST series, neutral stimuli: $M=6.53$, $SE=0.17$, $SD=0.96$; 2st DST series, stressful stimuli: $M=7.3$, $SE=0.21$, $SD=1.16$), the obtained effect size was medium (Cohen's $d = 0.7232$). There was no significant change in memory capacity in civilian students under stress (n=20, Wilcoxon test, $p=0.452$; 1st DST series, neutral stimuli: $M=6.78$, $SE=0.23$, $SD=1.02$; 2st DST series, stressful stimuli: $M=6.7$, $SE=0.23$, $SD=1.04$). Moreover, there was no significant change in memory capacity in fire cadets that were not under stress (n=20, Wilcoxon test, $p = 0.628$; 1st DST series, neutral stimuli: $M=6.88$, $SE=0.16$, $SD=0.70$; 2st DST series, neutral stimuli: $M=6.78$, $SE=0.16$, $SD=0.73$). Systolic wave amplitude in the stress-exposed groups changed more pronouncedly in students (Mann-Whitney test, $z=-2.131$; $p = 0.033$) compared to cadets.

Conclusions: In most of the fire cadets, moderate stress exposure resulted in a memory capacity increase.

Disclosure: No significant relationships.

Keywords: memory capacity; short-term memory; systolic wave amplitude; stress

EPV0543

Cognitive performance under stress: An experimental study in fire cadets

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Introduction: Future firefighters are trained and selected for a job requiring the ability to perform well under high stress and time pressure.

Objectives: The research is focused on the experimental study of fire cadets' cognitive performance indicators (speed/accuracy) under stress.

Methods: The study follows Solomon Four Group Design with two variables: stress stimuli (exposure/non-exposure) and participants' background (50 male fire cadets; 50 male civilian students). Stress stimuli consisted of emergencies' photos, audio, videos. ECG, EMG, systolic wave amplitude, pulse transit time were measured during the experiment to determine the respondents' stress levels. The cognitive reflection test (CRT) was performed. Mann-Whitney U-test, Spearman's rank correlation coefficient were used.

Results: There were no differences between students and fire cadets in CRT time ($p=0.515$, students: 118.1 ± 38.6 sec, cadets: 143.5 ± 78.1 sec) and accuracy ($p=0.246$, students: 1.2 ± 0.9 , cadets: 1.4 ± 0.9). Fire cadets in the stress exposure group (mean time=122, mean accuracy=1.22) performed CRT significantly faster ($p=0.039$) than non-exposed cadets (mean time=166, mean accuracy=1.56). The accuracy difference was insignificant ($p=0.206$). Fire cadets with prior emergency work experience (n=30, mean time=159.7, mean accuracy=1.6) were no different from other cadets (n=20, mean time=159.7, mean accuracy=1.1) both in time ($p=0.289$) and accuracy ($p=0.07$). The performance difference between civilian student groups was insignificant (exposure: mean time=123, mean accuracy=1.32; non-exposure: mean time=113, mean accuracy=1.06).

Conclusions: Stress exposure enhances fire cadets' CRT performance (in speed, but not in accuracy). Emergency work experience did not contribute to this effect, which could be explained by the self-selection effect (since only people inclined to emergency work choose to become a firefighter).

Disclosure: No significant relationships.

Keywords: cognitive performance; cognitive reflection test; stress

Psychosurgery & stimulation methods (ECT, TMS, VNS, DBS)

EPV0544

Secondary psychosis after a temporal lobe resection in a patient with refractory epilepsy. A case report

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