

PROBLEM OF 'DRUG ABUSE' IN AGING PEOPLE

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Keywords: addiction disorders, aging people, drug abuse, content analysis, risk factors.

Summary

The article provides the review of the current approaches to the problem of drug abuse in people of advanced age (65 and more).

Method of research. Content analysis of PubMed, Medline and PsycINFO resources, using search terms: "neuroleptics", "antidepressants", "anticonvulsive drugs"; "abuse", "non-medical use", "addiction", individual drug classes, individual substances, various combinations of substances, metaanalyses of the research of "drug abuse" in people of advanced aging people.

The results of the content analysis show that any medicine, which can cause psychoactive effect of any kind, for example relaxation, sedation, intoxication, euphoria, increase of energy, can become an object of abuse.

Conclusion. 1. Psychotropic drugs often have the potential for abuse by aging people with addiction. 2. Abuse of psychotropic substances significantly alters the clinical picture of an already formed drug dependence. 3. The problem requires new therapeutic approaches and complicates statistical processing and analysis of the existing problem. 4. Physicians who prescribe psychotropic drugs to aging people should be well aware of the potential risks of their use.

Introduction

Relevance of research is that any medicine, which can cause psychoactive effect of any kind, for example relaxation, sedation, intoxication, euphoria, increase of energy and hallucination, can become an object of abuse.

Such medicines as: antipsychotics (such as Quetiapine, Olanzapine), antihistamines, tricyclic antidepressants, anticonvulsants (such as Pregabalin, Gabapentin), muscle

relaxants and Clonidine are used excessively due to their sedative effect. Others antidepressants (Bupropion, Tianeptine et al.) – bring stimulating effect to abusers. More often psychotropic drugs are used to increase or prolong the effect of other substance, to change effect of other medicine or produce synergistic effect with each other. Non-medical reasons tend to lead to higher dosages comparing to therapeutic ones, and administration is changed for combined usage with drugs [1].

Method of Research. Content analysis of PubMed, Medline PsycINFO resources, using search terms: "neuroleptics", "antidepressants", "anticonvulsive drugs"; "abuse", "non-medical use", "addiction", individual drug classes (for example, "SSRI"), individual substances (for example, "Tianeptine", "Pregabalin"), various combinations of substances, metaanalysis of the research of "drug abuse" in aging people.

Results of content analysis

Antidepressants Abuse. Antidepressants with anticholinergic or dopaminergic effects, such as tricyclic antidepressants (TCAs), are most commonly abused. There are described cases of large doses amitriptyline abuse the use of which is followed by euphoria, relaxation, dizziness and feeling of comfort. F.e., the abuse of amitriptyline with the purpose "to achieve euphoria" in 25% of patients, on methadone substitution therapy. Dorman A. et al (1995), among patients, visiting drug treatment center, in 19% of cases TCA or their metabolites were found in urine [2]. The TCA taking in high doses caused pronounced euphoria, pleasant auditory and visual hallucinations. Patients with opioids addiction syndrome often try to use synergistic effect of interaction of opiates and TCA to increase or prolong opiate effect.

The most cases of antidepressants abuse are connected with Tianeptine. Tianeptine (Coaxil, Stablon) is a tricyclic benzodiazepine derivative capable of increasing presynaptic serotonin uptake in the brain. Recreational use of Tianeptine has only been seen in persons already using multiple substan-

ces for recreational purposes. In 2001, Singapore's Ministry of Health restricted Tianeptine prescribing to psychiatrists due to its recreational potential [3]. In 2003, Bahrain classified it a controlled substance due to increasing reports of misuse and recreational use [4]. Between 1989 and 2004, in France 141 cases of recreational use were identified, correlating to an incidence of 1 to 3 cases per 1000 persons treated with Tianeptine and 45 between 2006 and 2011. The main reason for recreational use is to achieve an anxiolytic effect. According to Servier, stopping of treatment with Tianeptine is difficult, due to the possibility of withdrawal symptoms in a person. The severity of the withdrawal is dependent on the daily dose, with high doses being extremely difficult to quit [5]. In 2007, according to French Health Products Safety Agency, tianeptine's manufacturer Servier agreed to modify the drug's label, following problems with dependency [6]. Tianeptine has been intravenously injected by drug users in Russia [5]. This method of administration reportedly causes an opioid-like effect and is sometimes used in an attempt to lessen opioid withdrawal symptoms. Tianeptine tablets contain silica and do not dissolve completely. Often the solution is not filtered well thus particles in the injected fluid block capillaries, leading to thrombosis and then severe necrosis. Abuse of Tianeptine is only seen thus far in a few patients with pre-existing multi-substance abuse disorders. One patient reportedly consumed a total of two hundred and forty 12.5 mg tablets (3000 mg) per day for several months and was later successfully detoxified in an inpatient setting. Most often, the abuse of Tianeptine begins with the vicar use of the drug by patients with opioid dependence. Tianeptine is used orally or intravenously. When ingested, the initial dose ranges from 7 to 30 tablets. The period of occasional use ranges from 1 week to 4 months. The maximum daily intake can be up to 750 tablets. The maximum daily dose for injection method is 450 tablets. Almost all patients notice the similarity of euphoria in the use of high doses of Tianeptine with euphoria during heroin intoxication. The first signs of withdrawal syndrome are detected 2-3 weeks after the start of systematic use of Tianeptine. In their clinical implications, they are similar to OSA, but there are some differences: affective and behavioral disorders prevail over pain and autonomic symptoms.

Antipsychotics abuse. Such medicines as Quetiapine, Olanzapine, are used to increase or prolong the effect of other substance, to change effect of other medicine or produce synergistic effect with each other. For example, using Quetiapine together with opium drugs, can lead to stronger effect then just using only one medicine [7].

Anticonvulsant abuse: Pregabalin. The first case of Pregabalin abuse was recorded in Sweden in early 2008, by the

end of 2008 there were 4 of such cases and 16 by the end of 2009. In Sweden, a cohort of 48,550 patients (2006–2009) who were given at least three prescriptions for Pregabalin during the year was studied. It was found out that 8.5% (4127 people) of them exceeded the maximum daily therapeutic doses, only 31% (1279) of this category had a history of surfactants dependence [8]. In Norway, 1854 urine samples were analyzed for the content of surfactant metabolites, Pregabalin was determined in 4.5% (83) of these samples [9]. Questionnaire survey of patients with surfactant abuse in Scotland revealed 22% (29/129) of respondents who abused Pregabalin; 38% (11/29) of them used Pregabalin to increase methadone intoxication [10].

The clinical picture of Pregabalin intoxication. The first use of small doses caused mild euphoria, sedation, comfort. All signs of OSA disappear. Because of the described above effects, 85% of patients immediately began to take the drug daily with a gradual but generally rapid increase in dosage. Increasing doses caused a state which was similar to alcohol intoxication (900-1200 mg). High doses of the drug cause a condition that resembles the effect of psychostimulants (an average of 3000 mg). Duration of intoxication is 2-5 hours. The maximum dose in the patients examined by us is 12,600 mg / day (42 tablets). With further increases in doses, further state changes are not observed. Prolonged use of the drug, reduces its euphorizing effect, while maintaining a pronounced desire for Pregabalin.

Legal status of Tianeptine and Pregabalin. In September 2012, France began treating Tianeptine (Stablon) as a controlled substance requiring a "secure prescription" form, as is required for narcotics [6]. In Russia Tianeptine (sold under the brand name "Coaxil") and Pregabalin ("Lyrica", "Algerica") are a schedule III controlled substances in the same list as the majority of benzodiazepines and barbiturates [<http://base.garant.ru/1211217656>; 11]. On April 6, 2018 Michigan became the first U.S. state to "ban" Tianeptine sodium, classifying it as a schedule II controlled substance [12]. The Centers for Disease Control and Prevention (CDC) has expressed concern that Tianeptine may be an "emerging public health risk," citing an increase in exposure-related calls to poison control centers in the United States. A rapid test method for detecting traces of "Lyrica" (Pregabalin) is described in details by Lobacheva G.K., Prokofieva E.V. [13]. This test may be useful for forensic chemical examination.

Discussion

Any medicine, which can cause psychoactive effect of any kind, for example relaxation, sedation, intoxication, euphoria, increase of energy and hallucination, can become an

object of abuse.

Prognostically increased risk of drug abuse among individuals: people of advanced age (65 and more) [14]; females; people living in rural area or socially isolated; persons suffering from mental disorders.

Risk factors of familiarizing and drug abuse among the people of advanced age: fear of aging and death; feeling of loneliness and own "uselessness"; decrease of social activity; insomnia; somatic diseases; depression as a reaction to aging, increase of physical weakness, problems of self-service, loss of close people ("widow" alcoholism), decrease of social mobility due to retirement [14].

Factors define high latency of addiction disorders in the elderly: social status of the patient suffers less during the retirement, so "addictive alertness" falls down; reduced motivation to seek for medical help (as a result of social activity decrease); "anosognosia", especially at the development of medicines addiction; living separately from the children, what allows to hide problems for a long time.

Patokinesis of drug addiction in late life (variants): 1) debut in late life (quite rarely); 2) dynamics of drug addiction of younger age, after long remission (seldom); 3) transformation of addiction, developed in a younger age (alcoholism etc.) into a different form (addiction to medicines); 4) Secondary drug addiction: ataractic reasons; starting dose and tolerance are high immediately; quick development of addictive motivation; addictive motivation in short terms becomes the leading one and provides the further growth of tolerance and progression of drug addiction; 5) Iatrogenic drug addiction (rarely seen in drug practice, usually at patients with chronic pain syndrome): the list of drugs doesn't change, prolonged use of primarily prescribed by a doctor "legal" drug with the following gradual growth of dose and increased frequency of reception [7, 9, 14].

Conclusion

1. Psychotropic drugs often have the potential for abuse by aging people with addiction.

2. Abuse of psychotropic substances significantly alters the clinical picture of an already formed drug dependence.

3. The problem requires new therapeutic approaches and complicates statistical processing and analysis of the existing problem.

4. Physicians who prescribe psychotropic drugs to aging people should be well aware of the potential risks of their use.

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SENŲVO AMŽIAUS ASMENŲ PIKTNAUDŽIAVIMAS VAISTAIS

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Raktažodžiai: priklausomybė, senyvo amžiaus asmenys, piktnaudžiavimas vaistais, rizikos faktoriai.

Santrauka

Straipsnyje pateikiama senyvo amžiaus (per 65 metus) žmonių piktnaudžiavimo vaistais apžvalga. Apžvalgos duomenys parodė, kad bet kurie vaistai, sukeltys psichoaktyvų efektą, pvz., relaksaciją, sedaciją, intoksikaciją, euforiją ar jėgų padidėjimą,

gali tapti piktnaudžiavimo objektu. Apžvalgos duomenys parodė, kad senyvo amžiaus asmenys piktnaudžiauja įvairių grupių psichotropiniais vaistais (tricikliais antidepresantais, antipsichotikais, prieštraukuliniais vaistais). Analizės duomenys parodė, kad dažniau piktnaudžiauja vaistais asmenys daugiau kaip 65 metų, moterys, gyvenančios kaime ir/ar patiriančios socialinę izoliaciją bei asmenys, turintys psichinių sveikatos problemų. Senyvo amžiaus asmenų piktnaudžiavimo vaistais problema yra sunkiau nustatoma dėl izoliacijos, anozognozijos bei sumažintos motyvacijos ieškoti pagalbos. Piktnaudžiavimas vaistais senyvame amžiuje sukelia di-

desnį sunkių somatinių būklių pavojų. Atsižvelgiant į egzistuojančią senyvo amžiaus asmenų piktnaudžiavimo vaistais problemą, šeimos gydytojai turi būti ypač atidūs, išrašydami psichotropinius vaistus senyvo amžiaus pacientams.

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Gauta 2019-07-03
