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Review Article

Anti - Anxiety Drugs – An Overview

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Abstract

Everyone experiences anxiety at one time or another "butterflies in the stomach" before giving a speech or sweaty palms during a job interview are common symptoms. Other symptoms of anxiety include irritability, uneasiness, jumpiness, feelings of apprehension, rapid or irregular heartbeat, stomach ache, nausea, faintness and breathing problems. An anxiolytic or antipanic or antianxiety agent is a drug used for the treatment of anxiety, and its related psychological and physical symptoms. Anxiolytics have been shown to be useful in the treatment of anxiety disorders. Beta-receptor blockers such as propranolol and oxprenolol, although not anxiolytics, can be used to combat the somatic symptoms of anxiety. Anxiolytics are also known as minor tranquilizers. The term is less common in modern texts, and was originally derived from a dichotomy with major tranquilizers, also known as neuroleptics or antipsychotics.

Keywords: Anti-Anxiety Drugs, Tranquilizers, Benzodiazepines

1. Introduction

Everyone experiences anxiety at one time or another "butterflies in the stomach" before giving a speech or sweaty palms during a job interview are common symptoms[1]. Other symptoms of anxiety include irritability, uneasiness, jumpiness, feelings of apprehension, rapid or irregular heartbeat, stomach ache, nausea, faintness and breathing problems. An anxiolytic or antipanic or antianxiety agent is a drug used for the treatment of anxiety, and its related psychological and physical symptoms[2]. Anxiolytics have been shown to be useful in the treatment of anxiety disorders. Beta-receptor blockers such as propranolol and oxprenolol, although not anxiolytics, can be used to combat the somatic symptoms of anxiety. Anxiolytics are also known as minor tranquilizers[3 - 6]. The term is less common in modern texts, and was originally derived from a dichotomy with major tranquilizers, also known as neuroleptics or antipsychotics. Anxiety is often manageable and mild. But sometimes it can present serious problems[7]. A high level or prolonged state of anxiety can be very incapacitating, making the activities of daily life difficult or impossible. Besides generalized anxiety, other anxiety disorders are panic, phobia, obsessive-compulsive disorder (OCD) and post traumatic stress disorder. Phobias, which are persistent, irrational fears and are characterized by avoidance of certain objects, places, and things, sometimes accompany anxiety[8 – 10]. A panic attack is a severe form of anxiety that may occur suddenly and is marked with symptoms of nervousness, breathlessness, pounding heart, and sweating. Sometimes the fear that one may die is present. Anti-anxiety medications help to calm and relax the anxious person and remove the troubling symptoms. There are a number of antia-nxiety medications currently available. The preferred medications for most anxiety disorders are the benzodiazepines[11]. In addition to the benzodiazepines, a non-benzodiazepine, buspirone, is used for generalized anxiety disorders[12].

2. Types of Anti-Anxiety Drugs

2.1 Benzodiazepines[13]: Benzodiazepines are prescribed for short-term relief of severe and disabling anxiety. Benzodiazepines may also be indicated to cover the latent periods associated with the medications prescribed to treat an underlying anxiety disorder. They are used to treat a wide variety of conditions and symptoms and are usually a first choice when short term CNS sedation is needed. Longer-term uses include treatment for severe anxiety. There is a risk of a benzodiazepine withdrawal and rebound syndrome after continuous usage for longer than two weeks, and tolerance and dependence may occur if patients stay under this treatment for longer. There is also the added problem of the accumulation of drug metabolites and adverse effects. Benzodiazepines include Alprazolam, Chlordiazepoxide, Clonazepam, Diazepam, Etizolam, Lorazepam etc. Benzodiazepines exert their anxiolytic properties at moderate dosage. At higher dosage hypnotic properties occur.

2.2 SSRIs[14]: Selective serotonin reuptake inhibitors or serotonin-specific reuptake inhibitor (SSRIs) are a class of compounds typically used as antidepressants in the treatment of depression, anxiety disorders, and some personality disorders. SSRIs are primarily classified as antidepressants and typically higher dosages are required to be effective against anxiety disorders than to be effective against depression but nevertheless most SSRIs have anxiolytic properties, but are anxiogenic when first initiating treatment, and in some individuals continue to be anxiety-provoking. For this reason, a low dose of a benzodiazepine is often used for several weeks when initiating SSRI/SNRI therapy in order to counteract the initial anxiety caused by the drugs until the therapeutic delay of the SSRI/SNRI is finished and the drug becomes effective.

2.3 Azapirones[15]: Azapirones are a class of 5-HT1A receptor agonists. They lack the sedation and the dependence associated with benzodiazepines and cause much less cognitive impairment. They may be less effective than benzodiazepines in patients who have been previously treated with benzodiazepines as they do not provide the sedation that these patients may expect or equate with anxiety relief. Currently approved azapirones include buspirone and tandospirone.

2.4 Barbiturates[16]: Barbiturates exert an anxiolytic effect linked to the sedation they cause. The risk of abuse and addiction is high. Many experts consider these drugs obsolete for treating anxiety but valuable for the short-term treatment of severe insomnia, though only after benzodiazepines or non-benzodiazepines have failed. They are rarely prescribed anymore.

2.5 Hydroxyzine[17, 18]: Hydroxyzine is an old antihistamine originally approved for clinical use by the FDA in 1956. It possesses anxiolytic properties in addition to its antihistamine properties and is also licensed for the treatment of anxiety and tension. It is also used for its sedative properties as a premed before anesthesia or to induce sedation after anesthesia. It has been shown to be as effective as benzodiazepines in the treatment of generalized anxiety disorder, while producing fewer side-effects.

2.6 Pregabalin[19 - 21]: Pregabalin's therapeutic effect appears after 1 week of use and is similar in effectiveness to lorazepam, alprazolam, and venlafaxine, but pregabalin has demonstrated superiority by producing more consistent therapeutic effects for psychic and somatic anxiety symptoms. Long-term trials have shown continued effectiveness without the development of tolerance and in addition unlike benzodiazepines, it does not disrupt sleep architecture and produces less severe cognitive and psychomotor impairment; it also has a low potential for abuse and dependence and may be preferred over the benzodiazepines for these reasons.

2.7 Other Herbal treatments[22 - 24]: Certain natural substances are reputed to have anxiolytic properties including the following Bacopa monnieri (Brahmi), Lactuca virosa (Opium Lettuce), Rhodiola rosea (Arctic Weed/Golden Root), Hypericum perforatum (St. John's Wort), Matricaria recutita (German Chamomile), Mitragyna speciosa (Kratom), Piper methysticum (Kava), Sceletium tortuosum (Kanna), Scutellaria spp. (Skullcap), Scutellaria lateriflora, Valeriana officinalis (Valerian), Salvia splendens, Coriandrum sativum (Coriander), Pineapple Sage (salvia elegans) etc.

3. Alternatives to Medication[25 – 27]

Psychotherapeutic treatment can be an effective alternative to medication. Exposure therapy is the recommended treatment for phobic anxiety disorders. Cognitive behavioral therapy (CBT) has been found to be effective treatment for panic disorder, social anxiety disorder, generalized anxiety disorder, and obsessive-compulsive disorder. Healthcare providers can also help by educating suffers about anxiety disorders and referring individuals to self help resources. CBT has been shown to be effective in the treatment of generalized anxiety disorder, and possibly more effective than pharmacological treatments in the long term. Sometimes medication is combined with psychotherapy but research has found

that there is no benefit of combined pharmacotherapy and psychotherapy versus mono-therapy.

4. Anti-Anxiety Drug Risk Factors

Anyone who takes anti-anxiety medication can experience unpleasant or dangerous side effects. But certain individuals are at a higher risk:

4.1 People Over 65: Older adults are more sensitive to the sedating effects of anti-anxiety medication. Even small doses can cause confusion, amnesia, loss of balance, and cognitive impairment that looks like dementia. Anti-anxiety drug use in the elderly is associated with an increased risk of falls, broken hips and legs, and car accidents[28].

4.2 Pregnant Women: Expectant mothers should avoid anti-anxiety drugs. Since these anxiety medications cross the placenta, their use during pregnancy can lead to dependence in the baby. Following birth, the baby will then go through withdrawal, with symptoms such as muscle weakness, irritability, sleep and breathing problems, and trembling. These anxiety drugs are excreted in breast milk, so they should be avoided while breastfeeding[29].

4.3 People with a History of Substance Abuse: Anyone with a current or former problem with alcohol or drugs should avoid anti-anxiety drugs or use them only with extreme caution. The greatest benefit of benzodiazepines is that they work quickly, but this also makes them addictive. This can quickly lead to their abuse, often in dangerous combination with alcohol or other illicit drugs[30].

5.Some Patents Related to Anti-Anxiety Drugs

5.1 7-Keto dhea for Psychiatric Use: The present invention comprises novel methods for the use of compositions comprising 7-keto DHEA for treating psychiatric conditions. These methods include administering an effective amount of a composition comprising 7-keto DHEA in an acceptable carrier, alone or in combination with other psychiatric drugs, such as analgesic agents, anticonvulsants, anti-anxiety agents, antidepressants, anti-panic agents, antipsychotic agents, bipolar agents, psychostimulants to reduce or ameliorate symptoms of a psychiatric condition. This method may be used alone or as an adjunctive treatment for treating a wide variety of psychiatric conditions such as stress disorders, anxiety disorders and depressive disorders[31].

5.2 Glutarimide Antianxiety and Antihypertensive Agents: Glutarimide derivatives of the formula which are useful antihypertensive and antianxiety agents STR1 wherein R.sub.1 and R.sub.2 each independently represent hydrogen, a 1 to 4 carbon alkyl, a 1 to 4 carbon alkoxy, halogen, nitro, hydroxy, SO.sub.3 H, SO.sub.2 NH.sub.2, and when R.sub.1 and R.sub.2 are taken together, form a fused phenyl group at the 1,2- or 3,4- positions, with the proviso that when R.sub.1 and R.sub.2 are identical they each represent a hydrogen, a 1 to 4 carbon alkyl, a 1 to 4 carbon alkoxy, hydroxy or a halogen group; A and B independently represent an oxo, a thio or an imino group having the formula --N(R.sub.6)[32].

5.3 Anti-Anxiety Method: This invention provides for a method of treating anxiety which comprises the administration of fluoxetine or norfluoxetine or pharmaceutically aceptable salts thereof[33].

5.4 Anti-Anxiety Agents: Anti-anxiety agents; namely, 1-(heterocyclylcarbonyl)-3-[4-(2-pyrimidinyl)-1-piperazinyl]propanes and 1-(heterocyclylsulfonyl)-3-[4-(2-pyrimidinyl)-1-(piperazinyl)]propanes; and methods for their preparation and use[34].

5.5 Peptide Having Antianxiety Activity and Screening Method Therefore: The objects of the present invention are to provide a polypeptide having an antianxiety activity; a therapeutic agent containing the polypeptide; a method for treating anxiety using the polypeptide; a method of screening for a compound capable of activating or suppressing a receptor for the polypeptide and involved in the regulation of anxiety, a salt thereof, or a hydrate of them; and a kit for the screening. There is provided an antianxiety agent containing relaxin-3[35].

References

1. Antianxiety agent. Dorland's Medical Dictionary, 2001.
2. Anxiolytic. Memidex Dictionary/Thesaurus, 2001.
3. http://www.memidex.com/anxiolytic+tranquilizer.
4. Gelder M, Mayou R, Geddes J. Psychiatry. 3rd Ed. New York: Oxford, 2005; pp236.
5. Lader M, Tylee A, Donoghue J. Withdrawing benzodiazepines in primary care. *CNS Drugs*. 2009; 23 (1): 19 – 34.

6. Montenegro M, Veiga H, Deslandes A. Neuro-modulatory effects of caffeine and bromazepam on visual event-related potential (P300): a comparative study. *Arq Neuropsiquiatr*. 2005; 63 (2): 410 – 5.
7. http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0004-6.
8. Barlow, Durand H, V. Mark. Chapter 7: Mood Disorders and Suicide. Abnormal Psychology: An Integrative Approach (Fifth Ed.). Belmont, CA: Wadsworth Cengage Learning, 2005.
9. http://www.medicinenet.com/hydroxyzine/article.htm.
10. Llorca PM, Spadone C, Sol O. Efficacy and safety of hydroxyzine in the treatment of generalized anxiety disorder: a 3-month double-blind study". *J Clin Psychiatry*. 2002; 63 (11): 1020 – 7.
11. Bandelow B, Wedekind D, Leon T. Pregabalin for the treatment of generalized anxiety disorder: a novel pharmacologic intervention. *Expert Rev Neurother*. 2007; 7 (7): 769 – 81.
12. http://www.psychiatrist.com/privatepdf/2002/v63n11/v63n1112.pdf.
13. http://www.ncbi.nlm.nih.gov/pubmed/12652886.
14. Owen RT. Pregabalin: its efficacy, safety and tolerability profile in generalized anxiety. *Drugs Today*. 2007; 43 (9): 601 – 10.
15. http://www.scielo.br/pdf/bjmbr/v39n4/6164.pdf
16. Ernst E. Herbal remedies for anxiety - a systematic review of controlled clinical trials. *Phytomedicine*. 2006; 13 (3): 205 – 8.
17. Shephard RA. Behavioral effects of GABA agonists in relation to anxiety and benzodiazepine action. *Life Sci*. 1987; 40 (25): 2429 – 36.
18. Foster AC, Kemp JA. Glutamate- and GABA-based CNS therapeutics. *Curr Opin Pharmacol*. 2006; 6 (1): 7 – 17.
19. http://www.anxietyinsights.info/abstract_chlorpheniramine_exerts_anxiolyticlike_effects_a
20. Zwanzger P, Deckert J. Anxiety disorders. Causes, clinical picture and treatment. *Nervenarzt*. 2007; 78 (3): 349 – 59.
21. Shearer SL. Recent advances in the understanding and treatment of anxiety disorders. *Prim Care*. 2007; 34 (3): 475 – 504.
22. Pollack M, Yap L. Cognitive behavioral and pharmacological treatment of generalized anxiety disorder: A preliminary meta-analysis. *Behavior Therapy*. 1997; 28 (2): 285 – 305.
23. http://www.sciencedirect.com/science/article/B7XMW-4JCS59S-4515f717b005757a92ea0e0c7b488.
24. Pull CB. Combined pharmacotherapy and cognitive-behavioural therapy for anxiety disorders. *Curr Opin Psychiatry*. 2007; 20 (1): 30 – 5.
25. Aazam MF. Coriandrum sativum: evaluation of its anxiolytic effect in the elevated plus-maze. *Journal of Ethnopharmacology*. 2005; 96 (3): 365 – 70.
26. Tortorielloa J. Antidepressant and anxiolytic effects of hydroalcoholic extract from Salvia elegans. *Journal of Ethnopharmacology*. 2006; 107 (1): 53 – 58.
27. Fux M, Levine J, Aviv A, Belmaker RH. Inositol treatment of obsessive-compulsive disorder. *American Journal of Psychiatry*. 1996; 153 (9): 1219 – 21.
28. Palatnik A, Frolov K, Fux M, Benjamin J. Double-blind, controlled, crossover trial of inositol versus fluvoxamine for the treatment of panic disorder. *Journal of Clinical Psychopharmacology*. 2001; 21 (3): 335 – 39.
29. Zuardi A. Cannabidiol as an antipsychotic drug. *Brazilian Journal of Medical and Biological Research*. 2006; 39 (4): 421 – 29.
30. http://www.dentaleconomics.com/articles/article_display.html?id=284909.
31. Sageman S, Brown R in-ventors. 7-Keto dhea for Psychiatric Use. Atlanta, GA, US. US patent 4,674,085; 1993 Feb 15.
32. Hibert M, Maurice W in-ventors. Glutarimide Antianxiety and Antihypertensive Agents. Merrell Dow Pharmaceuticals Inc. US Patent 4,612,312; 1986 Sep 16.
33. Stark, Paul in-ventors. Anti-Anxiety Method. Eli Lilly and Company. US Patent 4,590,213; 1986 May 20.
34. Welch in-ventor. Anti-Anxiety Agents. Pfizer Inc. New York, NY. US Patent 4,605,655; 1991Feb 19.
35. Hida T, Arai T in-ventors. Peptide Having Antianxiety Activity and Screening Method Therefore. US Patent 4,605,685; 2009 Dec 17.