Sertraline - StatPearls - NCBI Bookshelf

ncbi.nlm.nih.gov/books/NBK547689

Hardeep K. Singh, Abdolreza Saadabadi

Continuing Education Activity

Sertraline is a medication used to manage and treat the major depressive disorder, obsessive-compulsive disorder, panic disorder, post-traumatic stress disorder, premenstrual dysphoric disorder, and social anxiety disorder. It is in the SSRI class of medications. This activity outlines the indications, actions, and contraindications for sertraline as a valuable agent in the treatment of major depressive disorder and other disorders. This activity will highlight the mechanism of action, adverse event profile, and other key factors (e.g., off-label uses, dosing, monitoring, relevant interactions) pertinent for members of the interprofessional healthcare team in treating patients with major depressive disorder and related conditions.

Objectives:

- Identify the mechanism of action of sertraline.
- Describe the adverse effects of sertraline.
- Review the appropriate monitoring for sertraline.
- Summarize interprofessional team strategies for improving care coordination and communication to advance sertraline and improve outcomes.

Access free multiple choice questions on this topic.

Indications

FDA-approved Indications

- Sertraline is an antidepressant used as a first-line treatment of major depressive disorder.[1]
- Obsessive-compulsive disorder(OCD)[2]
- Panic disorder[3]
- Post-traumatic stress disorder(PTSD)[4]
- Premenstrual dysphoric disorder
- Social anxiety disorder(SAD)

Non-FDA-approved Indications

- Binge eating disorder[5]
- Body dysmorphic disorder

- Bulimia nervosa(BN)[5]
- Generalized anxiety disorder(GAD)

- Premature ejaculation

Mechanism of Action

Sertraline is an antidepressant medication within the selective serotonin reuptake inhibitors (SSRIs) class. Sertraline is an antidepressant with primarily inhibitory effects on presynaptic serotonin reuptake. This inhibition of serotonin reuptake results in an accumulation of serotonin. Serotonin in the central nervous system plays a role in regulating mood, personality, and wakefulness, which is why blocking serotonin reuptake is beneficial in disorders such as major depression.

Sertraline also has minimal effects on norepinephrine and dopamine uptake, and research has shown that it has more dopaminergic activity than other medications in the same SSRI class. Sertraline's mechanism of action makes it highly efficacious when used in the treatment of various psychiatric conditions.

Administration

Available Dosage Form

Sertraline is orally administered once daily in the morning or evening. If the patient experiences somnolence with sertraline, administer it in the evening. The absorption of sertraline may be improved when taken with food. Available dosages in the oral tablet form are 25 mg, 50 mg, 100 mg, in capsules of 150 mg, 200 mg, and solution form 20 mg/ml.

Adult Dosing

- Per FDA recommendation, the starting dose for major depressive disorder and obsessive-compulsive disorder is 50 mg once daily. The maintenance dose for depression and obsessive-compulsive disorder is 50 to 200 mg orally once a day. The dosage may be increased at weekly intervals depending on the clinical response.

- To treat a premenstrual dysphoric disorder, sertraline can be given continuously (every day) or intermittently (only in the luteal phase of the menstrual cycle, starting sertraline 14 days before the anticipated menstruation dates until the end of menses.
    - When dosing continuously, start the patient at 50 mg once daily. When not responding optimum, increase the dosage by 50 mg increments per menstrual cycle until the maximum dose of sertraline is 150 mg daily.
    - When dosing intermittently, start a patient at 50 mg once daily. If not responding optimum, then administer sertraline 50 mg daily for the first three days of dosing and then 100 mg daily during the remaining days of the dosing cycle. Intermittent dosing is to be repeated with each new cycle.
- For treatment of PTSD, PD, and SAD, the starting dose is 25 mg once daily. The sertraline dose increased by 50 mg increments at weekly intervals to a maximum of 200 mg per day. Sertraline dosing is generally once daily, and administration may be at any time of the day. [9]

Special Population

- Pregnancy: As per the American College of Obstetricians and Gynecologists, sertraline is Category C medicine.[10]
- Breastfeeding Women: Sertraline is preferred among antidepressants in breastfeeding women.[11]
- Hepatic Impairment: Sertraline should be used with caution in patients with liver disease, and a lower or less frequent dose is recommended by product labeling.
- Renal Impairment: Product labeling does not report any dose adjustment based on the patient's renal function.

Withdrawal

Discontinuation of serotonergic antidepressants may cause adverse reactions, particularly when the discontinuation is abrupt. Symptoms include nausea, diaphoresis, dysphoric mood, irritability, agitation, vertigo, sensory disturbances (e.g., paresthesia, electric shock sensations), tremor, anxiety, confusion, cephalgia, lethargy, emotional lability, sleep disorder, hypomania, tinnitus, and seizures. Therefore, it is preferable to reduce the dosage gradually rather than stop immediately whenever possible.

Adverse Effects

SSRIs, considered a newer class of antidepressants, are better tolerated than tricyclic antidepressants or monoamine oxidase inhibitors. The primary side effects of sertraline include syncope, lightheadedness, diarrhea, nausea, sweating, dizziness, xerostomia, confusion,

hallucinations, tremor, somnolence, impotence, a disorder of ejaculation, fatigue, rhinitis, and female sexual disorder.

There is a bleeding risk associated with sertraline, as it may inhibit platelet aggregation.

Sertraline can prolong the QT interval; however, the prolongation is dose-dependent and is very modest. Furthermore, this risk is higher in citalopram rather than sertraline or other SSRIs.

Sertraline may rarely produce symptoms of serotonin syndrome, though this generally happens when combining it with another serotonergic medication. These symptoms include myoclonus, muscle rigidity, diaphoresis, tremor, hyperreflexia, agitated delirium, and hyperthermia.

Sertraline, like other antidepressants, may increase the risk of suicidal ideation and behavior in children, adolescents, and young adults with major depression.

Sertraline use requires caution in patients 65 years and older. It is identified in the Beers Criteria as a high-risk medication in geriatric patients, as it may induce a syndrome of inappropriate antidiuretic hormone or hyponatremia.

Sertraline use in the first trimester of pregnancy increases the risk of cardiovascular-related malformations such as atrial and/or ventricular septal defects in infants.

Neonates exposed to sertraline late in the third trimester have been reported with complications requiring prolonged hospitalization, tube feeding, and respiratory support.

Contraindications

Sertraline is contraindicated in patients with documented hypersensitivity to the drug or its components. The coadministration of sertraline with thioridazine, pimozide, or monoamine oxidase inhibitors, including linezolid or methylene blue, is also contraindicated. Patients who are taking other serotonergic medications should receive education regarding the risks of coadministration with sertraline.

Sertraline solution is contraindicated with disulfiram as solution form contains 12% alcohol, and it may cause an alcohol-disulfiram reaction.

Sertraline therapy should not start within two weeks of discontinuing any monoamine oxidase inhibitor to prevent toxicity with serotonin syndrome.

There is a US black box warning for use in pediatric patients and young adults. Use caution in patients ages 18 to 24 years old due to the risk of an increase in suicidal ideation.

Monitoring

It is essential to monitor patients for unusual changes in behavior, anxiety, suicidality, or any other clinical signs of worsening illness. Regularly evaluate for depression and suicidality, especially when changing the dose of sertraline. Sertraline may also precipitate mania in patients at risk for bipolar disorder. Monitor for symptoms of mania in patients who are started on sertraline, especially if they have a family history of mania or bipolar disorder.

Monitor for abnormal bleeding, adverse effects of medication use, or withdrawal symptoms from abrupt discontinuation in patients taking sertraline. The abnormal bleeding may primarily occur if used concurrently with aspirin, NSAIDs, warfarin, or other anticoagulants, as sertraline may impair platelet aggregation and cause bruising, epistaxis, or hemorrhage.

For geriatric patients, monitor for changes in mental status, and check their sodium concentration regularly due to the risk of SIADH or hyponatremia.

Sertraline is considered safe in patients with a history of myocardial infarction, heart failure, and other cardiac conditions. However, due to the minor effect of QT prolongation, it may benefit the provider to monitor the QT interval with electrocardiograms.

Sertraline is also considered safe in pregnancy and with breastfeeding. Although not mandatory, therapeutic drug monitoring may be a consideration to ensure the safety of pregnant patients and infants who may have exposure to the medication. When treating pregnant women with sertraline during the third trimester, the physician should consider tapering sertraline in the third trimester by risk-benefit analysis.

Toxicity

The overdose of sertraline is generally well-tolerated. Sertraline toxicity may result in serotonin syndrome, resulting in myoclonus, muscle rigidity, diaphoresis, tremor, hyperreflexia, agitated delirium, and hyperthermia. Treatment of serotonin syndrome requires discontinuing the medication and supportive care. Consider antiemetics (non-serotonergic), benzodiazepines, and standard cooling measures for symptom relief. The patient can also receive serotonin antagonists such as cyproheptadine. If severe toxicity and the patient develops muscular rigidity and hyperthermia with body temperatures higher than 41 degrees C, consider sedation, endotracheal intubation, external cooling, and neuromuscular paralysis. It is important to note that antipyretics are likely not beneficial to patients experiencing hyperthermia due to serotonin syndrome.

Enhancing Healthcare Team Outcomes

Healthcare providers who often prescribe sertraline include primary care physicians, psychiatrists, nurse practitioners, and others, functioning as an interprofessional team. All healthcare team members must follow the patient regularly to monitor the reduction of symptoms or any adverse

effects. All providers should know the medication's contraindications, adverse effects, and interactions with other drugs. It is also essential to educate all patients who are prescribed sertraline on the possible adverse effects and the prevention and recognition of toxicity due to sertraline (in combination with other serotonergic drugs). Patient education regarding medication use and compliance will improve outcomes and ensure patient safety.

Patient safety can also be improved when dosing adjustments are considered by health care professionals who are a part of a patient's care team. For example, elderly patients may need dosing adjustments, as they may tolerate lower doses better. In addition, patients with medical conditions affecting their liver may need decreased doses for better tolerability.

Clinicians require vigilance regarding the toxic effects of serotonergic medications and ensure not to prescribe multiple medications that can cause serotonin syndrome, which is possible by preventing polypharmacy and minimizing unnecessary use of these drugs; this is one of the areas where the pharmacist can provide valuable input to the team as they monitor and verify the patient's medication regimen as well as monitor dosing of sertraline and other drugs. Furthermore, should a patient need to be switched to a different serotonergic medication, clinicians and other healthcare team members must ensure that no new medication starts until at least two weeks after the discontinuation of sertraline. Nursing can play a significant role in this type of monitoring, ensuring patient compliance, providing counsel, assessing therapeutic effectiveness, being aware of potential adverse drug reactions, and alerting the team of any concerns. With this type of cohesive interprofessional team coordination can sertraline therapy provide an optimal therapeutic benefit while minimizing adverse events. [Level 5]

Review Questions

- Access free multiple choice questions on this topic.
- Comment on this article.

References

1.
Cipriani A, La Ferla T, Furukawa TA, Signoretti A, Nakagawa A, Churchill R, McGuire H, Barbui C. Sertraline versus other antidepressive agents for depression. Cochrane Database Syst Rev. 2010 Apr 14;(4):CD006117. [PMC free article: PMC4163971] [PubMed: 20393946]

2.
Fenske JN, Schwenk TL. Obsessive compulsive disorder: diagnosis and management. Am Fam Physician. 2009 Aug 01;80(3):239-45. [PubMed: 19621834]

3.
Hobgood CD, Clayton AH. Sertraline in the treatment of panic disorder. Drugs Today (Barc). 2009 May;45(5):351-61. [PubMed: 19584964]

4.

Buhmann CB, Andersen HS. [Diagnosing and treating post-traumatic stress disorder]. Ugeskr Laeger. 2017 Jun 12;179(24) [PubMed: 28606295]

5.
Aigner M, Treasure J, Kaye W, Kasper S., WFSBP Task Force On Eating Disorders. World Federation of Societies of Biological Psychiatry (WFSBP) guidelines for the pharmacological treatment of eating disorders. World J Biol Psychiatry. 2011 Sep;12(6):400-43. [PubMed: 21961502]

6.
Kitaichi Y, Inoue T, Nakagawa S, Boku S, Kakuta A, Izumi T, Koyama T. Sertraline increases extracellular levels not only of serotonin, but also of dopamine in the nucleus accumbens and striatum of rats. Eur J Pharmacol. 2010 Nov 25;647(1-3):90-6. [PubMed: 20816814]

7.
Sanchez C, Reines EH, Montgomery SA. A comparative review of escitalopram, paroxetine, and sertraline: Are they all alike? Int Clin Psychopharmacol. 2014 Jul;29(4):185-96. [PMC free article: PMC4047306] [PubMed: 24424469]

8.
Hicks JK, Bishop JR, Sangkuhl K, Müller DJ, Ji Y, Leckband SG, Leeder JS, Graham RL, Chiulli DL, LLerena A, Skaar TC, Scott SA, Stingl JC, Klein TE, Caudle KE, Gaedigk A., Clinical Pharmacogenetics Implementation Consortium. Clinical Pharmacogenetics Implementation Consortium (CPIC) Guideline for CYP2D6 and CYP2C19 Genotypes and Dosing of Selective Serotonin Reuptake Inhibitors. Clin Pharmacol Ther. 2015 Aug;98(2):127-34. [PMC free article: PMC4512908] [PubMed: 25974703]

9.
Preskorn SH, Lane RM. Sertraline 50 mg daily: the optimal dose in the treatment of depression. Int Clin Psychopharmacol. 1995 Sep;10(3):129-41. [PubMed: 8675965]

10.
ACOG Committee on Practice Bulletins--Obstetrics. ACOG Practice Bulletin: Clinical management guidelines for obstetrician-gynecologists number 92, April 2008 (replaces practice bulletin number 87, November 2007). Use of psychiatric medications during pregnancy and lactation. Obstet Gynecol. 2008 Apr;111(4):1001-20. [PubMed: 18378767]

11.
Drugs and Lactation Database (LactMed®) [Internet]. National Institute of Child Health and Human Development; Bethesda (MD): Nov 15, 2024. Sertraline. [PubMed: 30000250]

12.
Beach SR, Kostis WJ, Celano CM, Januzzi JL, Ruskin JN, Noseworthy PA, Huffman JC. Meta-analysis of selective serotonin reuptake inhibitor-associated QTc prolongation. J Clin Psychiatry. 2014 May;75(5):e441-9. [PubMed: 24922496]

13.

Duignan KM, Quinn AM, Matson AM. Serotonin syndrome from sertraline monotherapy. Am J Emerg Med. 2020 Aug;38(8):1695.e5-1695.e6. [PubMed: 31837902]

14.
By the 2019 American Geriatrics Society Beers Criteria® Update Expert Panel. American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults. J Am Geriatr Soc. 2019 Apr;67(4):674-694. [PubMed: 30693946]

15.
Varela Piñón M, Adán-Manes J. Selective Serotonin Reuptake Inhibitor-Induced Hyponatremia: Clinical Implications and Therapeutic Alternatives. Clin Neuropharmacol. 2017 Jul/Aug;40(4):177-179. [PubMed: 28622213]

16.
Shen ZQ, Gao SY, Li SX, Zhang TN, Liu CX, Lv HC, Zhang Y, Gong TT, Xu X, Ji C, Wu QJ, Li D. Sertraline use in the first trimester and risk of congenital anomalies: a systemic review and meta-analysis of cohort studies. Br J Clin Pharmacol. 2017 Apr;83(4):909-922. [PMC free article: PMC5346877] [PubMed: 27770542]

17.
Sola CL, Bostwick JM, Hart DA, Lineberry TW. Anticipating potential linezolid-SSRI interactions in the general hospital setting: an MAOI in disguise. Mayo Clin Proc. 2006 Mar;81(3):330-4. [PubMed: 16529136]

18.
DeVane CL, Liston HL, Markowitz JS. Clinical pharmacokinetics of sertraline. Clin Pharmacokinet. 2002;41(15):1247-66. [PubMed: 12452737]

19.
Leverich GS, Altshuler LL, Frye MA, Suppes T, McElroy SL, Keck PE, Kupka RW, Denicoff KD, Nolen WA, Grunze H, Martinez MI, Post RM. Risk of switch in mood polarity to hypomania or mania in patients with bipolar depression during acute and continuation trials of venlafaxine, sertraline, and bupropion as adjuncts to mood stabilizers. Am J Psychiatry. 2006 Feb;163(2):232-9. [PubMed: 16449476]

20.
Andrade C, Sandarsh S, Chethan KB, Nagesh KS. Serotonin reuptake inhibitor antidepressants and abnormal bleeding: a review for clinicians and a reconsideration of mechanisms. J Clin Psychiatry. 2010 Dec;71(12):1565-75. [PubMed: 21190637]

21.
Glassman AH, O'Connor CM, Califf RM, Swedberg K, Schwartz P, Bigger JT, Krishnan KR, van Zyl LT, Swenson JR, Finkel MS, Landau C, Shapiro PA, Pepine CJ, Mardekian J, Harrison WM, Barton D, McIvor M., Sertraline Antidepressant Heart Attack Randomized Trial (SADHEART) Group. Sertraline treatment of major depression in patients with acute MI or unstable angina. JAMA. 2002 Aug 14;288(6):701-9. [PubMed: 12169073]

22.
O'Connor CM, Jiang W, Kuchibhatla M, Silva SG, Cuffe MS, Callwood DD, Zakhary B, Stough WG, Arias RM, Rivelli SK, Krishnan R., SADHART-CHF Investigators. Safety and efficacy of sertraline for depression in patients with heart failure: results of the SADHART-CHF (Sertraline Against Depression and Heart Disease in Chronic Heart Failure) trial. J Am Coll Cardiol. 2010 Aug 24;56(9):692-9. [PMC free article: PMC3663330] [PubMed: 20723799]

23.
Paulzen M, Goecke TW, Stickeler E, Gründer G, Schoretsanitis G. Sertraline in pregnancy - Therapeutic drug monitoring in maternal blood, amniotic fluid and cord blood. J Affect Disord. 2017 Apr 01;212:1-6. [PubMed: 28129551]

24.
Pinheiro E, Bogen DL, Hoxha D, Ciolino JD, Wisner KL. Sertraline and breastfeeding: review and meta-analysis. Arch Womens Ment Health. 2015 Apr;18(2):139-146. [PMC free article: PMC4366287] [PubMed: 25589155]

25.
Wang RZ, Vashistha V, Kaur S, Houchens NW. Serotonin syndrome: Preventing, recognizing, and treating it. Cleve Clin J Med. 2016 Nov;83(11):810-817. [PubMed: 27824534]

Disclosure: Hardeep Singh declares no relevant financial relationships with ineligible companies.

Disclosure: Abdolreza Saadabadi declares no relevant financial relationships with ineligible companies.