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A Case Report of Sildenafil Poisoning and an Approach to Management

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Abstract

Sildenafil is Food and Drug Administration approved medication for management of erectile dysfunction which was initially used for pulmonary hypertension. We hereby report a case of 32-year-old male suffering from erectile dysfunction who attempted suicide following altercation with his wife by consuming around 30 tablets of 100 mg sildenafil. He was admitted to medical emergency unit with complaints of flushing, multiple episodes of vomiting, hypotension, tachycardia, dehydration, and priapism. Patient was managed with intravenous fluids and supportive management. Subsequently patient was follow-up in psychiatry outpatient department and responded well.

Keywords: Overdose, Hypotension, Priapism, Sildenafil Toxicity

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1. Introduction

Sildenafil is an orally active drug. Food and Drug Administration approved for sexual dysfunction and marketed in USA in March 1998 while it was launched in Indian market 2 years later in doses of 25, 50, and 100 mg. Since then it has revolutionized treatment of erectile dysfunction. It causes smooth muscle relaxation of corpus cavernosa by causing the release of nitric oxide which increases the synthesis of cAMP and thus leading to turgidity and tumescence of penis. [1]This case report highlights various hemodynamic effects along with priapism in sildenafil overdose.

2. Case Report

A 32-year-old married male presented in department of psychiatry outpatient department (OPD) with complaints of erectile dysfunction for 6 months. Patient was married 2 years back but after initiation of erectile dysfunction, he developed interpersonal problems with wife which was gradually worsening with time. Vitals of the patient were stable and on physical examination, no abnormality was detected. There was no history of diabetes, hypertension, or any other medical disorder which could lead to erectile dysfunction. Patient was diagnosed as case of erectile dysfunction for which he was prescribed sildenafil 50-mg if needed (SOS). After 4 weeks in follow-up, he did not report significant improvement, but conflicts with his wife increased, so dose of sildenafil was increased to 100 mg SOS and planned for psychotherapy.

Patients started showing mild response to 100 mg of sildenafil and as a result of increasing conflicts with his wife, depressive symptoms developed and patient stopped coming in follow-up. One day patient attempted suicide following altercation with his wife by consuming around 30 tablets of 100 mg sildenafil for which he was immediately admitted in medical emergency department

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within 2 h of ingestion. Patient presented in emergency with multiple episodes of vomiting, flushing, headache, and dizziness. On general examination he was dehydrated but had no pallor or icterus. He was afebrile and his vitals were as follows: Pulse rate 100/min, blood pressure 80/60 mm Hg, respiratory rate 20/min. He also had penile tumescence but systemic examinations revealed no abnormality. Investigation revealed hemoglobin 14 mg/dl, total leucocyte count 8000/mm^3, differential count polymorphs-70%, lymphocyte-18%, and platelet 3.8 lacs/mm^3. Serum electrolytes, random blood sugar, renal function test, liver function test, and urine analysis were within normal limits. Electrocardiography revealed sinus tachycardia and chest X-ray was normal. His repeated arterial blood gas analysis reports were also found to be normal. Serum concentration of sildenafil could not be carried out due to the unavailability of facility.

3. Treatment and Follow-up

Gastric lavage was done by Ryle's tube immediately for benefit of doubt as more than 1-h has passed since ingestion; simultaneously he was managed with adequate intravenous fluids and supportive therapy. His vitals were monitored closely. Patient's blood pressure improved and became normal after 1-h of intravenous fluid therapy. After 12 h of treatment he was improved significantly but priapism persisted which also improved gradually after 36 h without any specific intervention. Repeated serum electrolytes, random blood sugar, renal function test, and liver function test were normal and he was discharged 4^{th} day of admission in fully conscious state.

After discharge from medicine department, patient was seen in psychiatry OPD where patient was managed with supportive psychotherapy and interpersonal therapy. As patient was not willing to take same drug again, sildenafil was stopped and switched to tadalafil 20- mg SOS with proper psychoeducation to patient and his wife. In subsequent follow-up for 4 months, patient was found to respond well to treatment and was maintained on same management.

4. Discussion

Sildenafil selectively inhibits phosphodiesterase-5 (PDE-5) thus resulting in increased release of nitric oxide nitric oxide from nerve ending and endothelium which causes relaxation of smooth muscles in corpus cavernous and blood vessels which ultimately results in cavernosal engorgement and penile erection. Oral absorption of sildenafil is around 40% and it attains its peak level in 1-h. Average half-life is 4 h in individuals <-65 years and recommended dose is 50-100 mg (for men >65 years dose is 25 mg) an hour before sexual intercourse. Sildenafil is recommended for use no more than once a day.[2]

Side effects associated with sildenafil are produced due to its PDE-5 inhibition mediated vasodilatation, which includes facial flushing (9%), dyspepsia (6%), headaches (19%), nasal congestion (4%), and transient altered color vision (7%).[3] Apart from these adverse effects diarrohea, stomach pain, and rash can also occur.[1] Sildenafil overdose can cause hepatotoxicity, priapism, hypotension, and arrhythmia, rhabdomyolysis and subjective visual perception changes.[4-6]Priapism is well reported with sildenafil.[7] and cases of sildenafil overdose have also been reported where dose up to 2000 mg was consumed which was well-tolerated with only mild abnormalities such as flushing, headache, and mild tachycardia.[8]It is contraindicated in men receiving nitrate therapy which can potentiate its hypotensive effect and may result in profound shock a potentially fatal state. Fatality with sildenafil poisoning has also been reported, a data from national poison center revealed that among 123 cases with sildenafil exposure five resulted in serious outcomes or death.[9]

In our case, since patient was brought in medical emergency within 2 h of ingestion, which means that around 1200 mg (40% absorption of total dose i.e., 3000-mg) of sildenafil would have been already absorbed from gastrointestinal gastrointestinal tract, and by that time its action would also have reached its peak. So patient in this case developed dizziness, flushing, dehydration, tachycardia, hypotension, and priapism. To our best knowledge this is the case reported so far who consumed highest amount sildenafil (3 g) to commit suicide and was managed successfully.

5. Conclusion

Sildenafil overdose and poisoning are very less reported but toxic side effects are important to understand. In our case sildenafil was consumed in a dose of around

3000 mg where serious adverse effects occurred such as flushing, hypotension, tachycardia, and priapism which were managed conservatively with gastric lavage and hemodynamic support. Priapism was nonpainful and improved without urological intervention. Awareness of this condition will help physician to recognize various hemodynamic events of sildenafil poisoning for better management.

6. References

1. James SB, Alcott SV, Ruiz P. Phoshphodiesrease-5 inhibitor. Kaplan and Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry. 11th ed. New Delhi: Wolters Kluwer Pvt Ltd. 2007; 1008–10.
2. Tripathi KD. Androgens and drugs for erectile dysfunction. In: Tripathi KD, editor. Essentials of Medical Pharmacology. 6th ed. New Delhi: Jaypee Brothers Medical Publishers. 2008; 296–305.
3. McVary KT. Sexual dysfunction. In: Longo DL, Fauci AS, Kasper DL, Hauser SL, Jameson JL, Loscalzo J et al. editors. Harrison's Principles of Internal Medicine. 18th ed. New York: McGraw Hill. 2012; 374–80.
4. Daghfous R, El Aidli S, Zaiem A, Loueslati MH, Belkahia C. Sildenafil-associated hepatotoxicity. Am J Gastroenterol. 2005; 100:1895–6.
5. Wills BK, Albinson C, Wahl M, Clifton J. Sildenafil citrate ingestion and prolonged priapism and tachycardia in a pediatric patient. Clin Toxicol (Phila). 2007; 45:798–800.
6. Oh DJ. Sildenafil overdose can cause rhabdomyolysis and subjective visual perception changes. Nephrology (Carlton). 2014; 19:258.
7. Sadeghi-Nejad H, Dogra V, Seftel AD, Mohamed MA. Priapism. Radiol Clin North Am. 2004; 42:427–43.
8. Hung DZ, Yang DY. Sildenafil overdose in a female patient. J Toxicol Clin Toxicol. 2001; 39:423–4.
9. Krenzelok EP. Sildenafil: Clinical toxicology profile. J Toxicol Clin Toxicol. 2000; 38:645–51.