

Chronic self-medication with amlodipine for headache in a young adult with depression

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Abstract

Self-medication (SM) is on rise across the world. A headache and other pain conditions are most common indications while analgesics and antibiotics are most commonly used in SM. We here present a case of chronic SM with amlodipine in a case of recurrent depressive disorder, current episode moderate with somatic syndrome, and tension-type headache. To authors' best knowledge, this is first case report of SM with amlodipine for headache in a patient suffering with depression. A 19-year-old male patient presented with 2 years' history suggestive of the recurrent depressive episode and SM with amlodipine for headache. Physical examination was unremarkable. Mental Status Examination found depressive affect with hopelessness. Standard treatment for depression was beneficial to him. Amlodipine, belonging to dihydropyridine group of calcium channel blocker, might reduce headache due to its pharmacodynamic properties. Although it is considered a safe antihypertensive, several reports of fatal side effects exist due to its intentional and accidental overdose. This case adds to the existing literature on SM and highlights a different pattern of the same with amlodipine.

Key words: Amlodipine, depression, headache, self-medication

INTRODUCTION

Self-medication (SM) is defined as the "use of a product without medical prescription or medical consultation to prevent or treat a disease or a symptom or to promote health".^[1-3] Internationally being on the rise, it has been found to be prevalent ranging from 2% to 92% in different countries including in a recent review.^[4-6] Headache and other pain conditions were most common indications while analgesics and antibiotics were found to be used most commonly in SM.^[2,3,6,7] We here present a case of amlodipine SM for headache in a young adult with depression. A MEDLINE and Science Direct review through October 2015 revealed no report for amlodipine SM for headache.

disturbances, and episodic headache following debilitating illness of his father for 2 years. History of present illness revealed that his illness started after his father had suffered from the cerebrovascular accident and become unable to continue his job due to his residual weakness of limbs. Following this, he gradually started feeling low and could not carry out his studies well. He also found difficulty in falling asleep. He used to get awakened in midnight several times following which it was difficult for him to fall asleep again. His headache was episodic in nature. He used to feel heaviness in head, and it was not associated with nausea, vomiting, photophobia, or phonophobia. According to him, it frequently occurred during bedtime and made his sleep difficult. As day progress, he found himself not enjoying his other leisure activities including hanging out with his friends. He used to prefer to confine to his room most of

CASE REPORT

Index patient, a 19-year-old male patient hailing from urban West Bengal, India, presented with insidious onset and deteriorating history of low mood, lack of concentration in studies, sleep

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the time in a day. He did not report the use of any substance use. However, his treatment history revealed the use of tablet amlodipine 10 mg/day with average frequency of use being thrice in a week. According to him, his ailing father was on regular treatment with amlodipine (a calcium channel blocker [CCB]) and he became curious of this. He came to know about details of amlodipine from the internet and made use of that for his headache. He also elaborated that from the internet, he assumed that tablet amlodipine might reduce blood pressure and thus reduce his headache which he thought might be due to the variation of blood pressure in his head. On further inquiry, he revealed his headache used to get relieved or reduce in severity, after taking tablet amlodipine, for average 15-20 min duration which helped him to fall asleep most of the nights. He did not experience any other effects or change including any adverse side effect. Neither had he taken consultation from any physician nor did he tell to his parents regarding his SM. Physical examination was within the physiological limit. Mental Status Examination revealed depressed affect with hopelessness. No perceptual abnormality was noted. Insight was Grade IV with intact judgment. According to International Classification of Disease 10th version by the World Health Organization and the International Classification of Headache Disorders, 3rd edition (beta version) by Headache Classification Committee of the International Headache Society, a working diagnosis of recurrent depressive disorder, current episode moderate without somatic syndrome (F33.10), and abuse of other non-dependence-producing substances (F55.8) with headache attributed to depressive disorder (A12.3) were made.^[8,9] Standard treatments for depression was beneficial to him.

DISCUSSION

Amlodipine, belongs to dihydropyridine group of CCB, inhibits voltage-gated L-type calcium channels, thereby decreasing the concentration of free intracellular calcium ions leading to decreased contraction and vasodilation.^[10,11] In line with this, successful prophylaxis for migraine with amlodipine has been reported.^[12,13] Among psychiatric patient population, amlodipine has been studied in cocaine dependence with conflicting results.^[13-15] It has been found to reduce headache frequency in cocaine dependent individuals.^[16] Amlodipine is an effective and safe antihypertensive agent and is also preferred in high-risk hypertensive patient subgroups.^[17-19] However, there are few reports on near fatal amlodipine overdose and intoxication.^[20-26] Furthermore, intentional amlodipine poisoning with suicidal intent has been reported.^[21,27-29] In our report, index patient did not report any incident of overdose or fatal side effect due to amlodipine neither he reported any suicidal ideas or attempt during his illness. Thus, our case demonstrates a unique pattern of SM with amlodipine in a young adult suffering from depression and adds to the existing literature of SM in psychiatric patient population. To author's best of knowledge, this is first case

report of SM with amlodipine. This case also highlights SM with amlodipine for headache in a young adult with depression. Patients gather information regarding medication from family members, peers as well as from advertisements, and indulge in SM. In India, it is very common to notice the ill-informed SM practice, which poses an emerging challenge to health-care providers. At the community level, such under-informed SM practices can increase the burden of drug-induced diseases and thus encourage wasteful public expenditure.^[30]

CONCLUSION

Clinicians should be aware of this nature of SM in patients suffering from headache as amlodipine is commonly used for other medical reasons in adult population and may readily be available in households. Besides, this report highlights peculiar SM behavior of the patient that is worth sharing. This reiterates the importance of physicians' role in patient counseling and patient education. More research should explore this topic in future.

REFERENCES

1. Paulo LG, Zanini AC. Self-medication in Brazil. *AMB Rev Assoc Med Bras* 1988;34:69-75.
2. Abahussain E, Matowe LK, Nicholls PJ. Self-reported medication use among adolescents in Kuwait. *Med Princ Pract* 2005;14:161-4.
3. Gualano MR, Bert F, Passi S, Stillo M, Galis V, Manzol L, *et al.* Use of self-medication among adolescents: A systematic review and meta-analysis. *Eur J Public Health* 2015;25:444-50.
4. Blenkinsopp A, Bradley C. Patients, society, and the increase in self medication. *BMJ* 1996;312:629-32.
5. Bradley C, Blenkinsopp A. Over the counter drugs. The future for self medication. *BMJ* 1996;312:835-7.
6. Shehnaz SI, Agarwal AK, Khan N. A systematic review of self-medication practices among adolescents. *J Adolesc Health* 2014;55:467-83.
7. Shehnaz SI, Khan N, Sreedharan J, Issa KJ, Arifulla M. Self-medication and related health complaints among expatriate high school students in the United Arab Emirates. *Pharm Pract (Granada)* 2013;11:211-8.
8. World Health Organization. The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Description and Diagnostic Guidelines. Geneva: WHO; 1993.
9. Headache Classification Committee of the International Headache Society (IHS). The international classification of headache disorders, 3rd edition (beta version). *Cephalalgia* 2013;33:629-808.
10. Zisaki A, Miskovic L, Hatzimanikatis V. Antihypertensive drugs metabolism: An update to pharmacokinetic profiles and computational approaches. *Curr Pharm Des* 2015;21:806-22.

11. Striessnig J, Ortner NJ, Pinggera A. Pharmacology of L-type calcium channels: Novel drugs for old targets? *Curr Mol Pharmacol* 2015;8:110-22.
12. Dandapani BK, Hanson MR. Amlodipine for migraine prophylaxis. *Headache* 1998;38:624-6.
13. Leonard L, Phillips WJ. Near-complete migraine prophylaxis with amlodipine: A case report. *J Pain Symptom Manage* 2007;34:571-3.
14. Malcolm R, Brady KT, Moore J, Kajdasz D. Amlodipine treatment of cocaine dependence. *J Psychoactive Drugs* 1999;31:117-20.
15. Malcolm R, LaRowe S, Cochran K, Moak D, Herron J, Brady K, *et al.* A controlled trial of amlodipine for cocaine dependence: A negative report. *J Subst Abuse Treat* 2005;28:197-204.
16. Malcolm R, Liao J, Michel M, Cochran K, Pye W, Yeager D, *et al.* Amlodipine reduces blood pressure and headache frequency in cocaine-dependent outpatients. *J Psychoactive Drugs* 2002;34:415-9.
17. Tyler HM. Amlodipine: An effective once-daily antihypertensive agent. *J Hum Hypertens* 1991;5 Suppl 1:61-6.
18. Osterloh IH. An update on the safety of amlodipine. *J Cardiovasc Pharmacol* 2015;17 Suppl 1:S65-8.
19. Jeffers BW, Robbins J, Bhambri R, Wajsbrodt D. A systematic review on the efficacy of amlodipine in the treatment of patients with hypertension with concomitant diabetes mellitus and/or renal dysfunction, when compared with other classes of antihypertensive medication. *Am J Ther* 2015;22:322-41.
20. Saravu K, Balasubramanian R. Near-fatal amlodipine poisoning. *J Assoc Physicians India* 2004;52:156-7.
21. Sklerov JH, Levine B, Ingwersen KM, Aronica-Pollack PA, Fowler D. Two cases of fatal amlodipine overdose. *J Anal Toxicol* 2006;30:346-51.
22. Harris NS. Case records of the Massachusetts general hospital. Case 24-2006. A 40-year-old woman with hypertension after an overdose of amlodipine. *N Engl J Med* 2006;355:602-11.
23. Vogt S, Mehlig A, Hunziker P, Scholer A, Jung J, González AB, *et al.* Survival of severe amlodipine intoxication due to medical intensive care. *Forensic Sci Int* 2006;161:216-20.
24. Poggenborg RP, Videbaek L, Jacobsen IA. A case of amlodipine overdose. *Basic Clin Pharmacol Toxicol* 2006;99:209-12.
25. Rizvi I, Ahmad A, Gupta A, Zaman S. Life-threatening calcium channel blocker overdose and its management. *BMJ Case Rep* 2012;2012. pii: bcr0120125643.
26. Nimbalkar SM, Patel DV. Near fatal case of amlodipine poisoning in an infant. *Indian J Pediatr* 2013;80:513-5.
27. Chodorowski Z, Anand JS, Waldman W. Suicidal poisoning with antihypertensive drugs. *Przegl Lek* 2003;60:233-5.
28. Feldman R, Glinska-Serwin M. Deep hypotension with transient oliguria and severe heart failure in course of acute intentional poisoning with amlodipine. *Pol Arch Med Wewn* 2001;105:495-9.
29. Stanek EJ, Nelson CE, DeNofrio D. Amlodipine overdose. *Ann Pharmacother* 1997;31:853-6.
30. Bennadi D. Self-medication: A current challenge. *J Basic Clin Pharm* 2013;5:19-23.

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