

Sibutramine and its cardiovascular effects: A deadly combination

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Madam, obesity is a chronic disease, and life-threatening co-morbidities associated with it have strongly supported the development of anti-obesity pharmacotherapy. Sibutramine is a serotonin and norepinephrine reuptake inhibitor. It is a β -phenethylamine and is used together with diet and exercise for the short-term and long-term treatment of obesity. However, Sibutramine is not free of shortcomings; it is known to commonly cause acute cardiovascular events and even adverse cardiovascular outcomes in some patients with pre-existing cardiovascular disease. Sibutramine has been withdrawn in many countries of the world, including the US, Canada, and Australia. Even then, authorities deemed this drug to be more beneficial than harmful, and this drug was marketed.

However, a 2021 study published in Cardiovascular Toxicology voiced more concerns-the study demonstrated the toxicity profile of Sibutramine. The study showed how Sibutramine was able to induce concentration-dependent alterations in maximum amplitude of action potential (MAPs) and resting membrane potentials (RMP) in freshly isolated ventricular cardiomyocytes. The drug also induced Ca^{2+} -release from the sarcoplasmic reticulum under either electrical or caffeine stimulation. It also depressed left ventricular developed pressure with a marked decrease in the end-diastolic pressure.¹

Many other reports showing similar outcomes. A 2021 case study by Rodriguez-Guerra et al. reported the presentation of a patient with non-ST elevation coronary syndrome who had no previous history of coronary heart

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disease. The patient died in 24 hours and the autopsy report showed acute inadvertent intoxication of Sibutramine.²

These bothersome results support the statement that Sibutramine is not a safe drug to be marketed.

The drug that has been withdrawn in the US for about 11 years is still being prescribed in many countries including Pakistan during regular practice. Physicians should abstain from directing the use of Sibutramine in patients at risk of cardiovascular diseases as cardiovascular diseases are highly prevalent in Pakistan.³ If patients under the treatment of Sibutramine experience pounding heartbeats and shortness of breath, they should seek immediate medical attention. The concerned authorities should also look into the matter of such drugs and work on implementing drugs with a better risk-benefit ratio in the market.

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References

1. Alyu F, Olgar Y, Degirmenci S, Turan B, Ozturk Y. Interrelated In Vitro Mechanisms of Sibutramine-Induced Cardiotoxicity. *Cardiovasc Toxicol.* 2021; 21:322-35.
2. Rodriguez-Guerra M, Yadav M, Bhandari M, Sinha A, Bella JN, Sklyar E. Sibutramine as a Cause of Sudden Cardiac Death. *Case Rep Cardiol.* 2021; 2021:8896932.
3. Dennis B, Aziz K, She L, Faruqui AM, Davis CE, Manolio TA, et al. High rates of obesity and cardiovascular disease risk factors in lower middle class community in Pakistan: the Metroville Health Study. *J Pak Med Assoc.* 2006; 56:267-72.