

Carcinogenic NMDA Contamination of Drugs for Heartburn, Hypertension and Diabetes

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Recently the health industry suffered a major setback when the U.S Food and Drug Administration (FDA) announced that some drugs have been contaminated with a potential human carcinogen, N-methyl-D-aspartate (NMDA). The drugs include Angiotensin Receptor Blockers (ARBs), used mainly for hypertension, Ranitidine and Nizatidine (popular brand names being Zantac and Axid), used excessively for heartburn, and extended-release Metformin, a drug for Diabetes.¹

The presence of NMDA in drugs above the acceptable daily intake (ADI) limit may have multiple causes such as pre-existing contamination of raw materials, usage of contaminated water, recovered solvents, enzymes and catalysts containing residual amines, processes using nitrites in the presence of amines, quenching being done in the main reactor mixture, lack of pH or temperature control during manufacturing or increased storage time of drugs. Hence, contamination can be prevented by using purified water, raw materials and recovered solvents, enzymes and catalysts, avoiding use of amines or nitrites whenever possible, avoidance of quenching in main reactor, optimizing the manufacturing environment, and decreasing drug storage time.²

Drug manufacturers must regularly test their drugs for NMDA levels, and if above the ADI limit, report to the FDA. The FDA has published a detailed guide on steps the pharmacy industry should take to detect, prevent and report NMDA contamination of drugs.² Some companies like Nostrum have voluntarily recalled their products after detecting increased levels.³ Patients requiring such medications should continue to take their drugs, as discontinuing them might be dangerous to their health, but refer to their physicians for possible alternatives. Patients may find out if the drug they're currently taking has been recalled, by contacting the FDA or their pharmacy.¹

Lastly let this scare motivate the general healthy population to adopt measures to decrease need for such drugs in the future; a healthy weight, adequate exercise, quitting smoking, decreasing alcohol consumption and increasing fiber and reducing fat in diet may prevent diseases like heartburn, hypertension and diabetes.^{4,5} Physicians should encourage 150 minutes of moderate exercise per week, consumption of fruits and vegetables, and usage of medications to help quit smoking. For those already suffering from diseases, the pharmaceutical industry must ensure that only NMDA-free medications are produced and marketed.

Abbreviations

ARBs, Angiotensin Receptor Blockers; ADI, acceptable daily intake; FDA, Food and Drug Administration; NMDA, N-methyl-D-aspartate.

Author's Note

Our study did not require an ethical board approval because it did not contain human or animal trials.

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