

Antibiotics poisoning Yamuna water

Researchers Say Drugs May Be Behind Spike In Diabetes, Cancer

DurgeshNandan.Jha
@timesgroup.com

Think before you pour leftover antibiotics down the drain. They wash into the Yamuna and harm the plant and animal life dependent on it. And now, doctors suspect, they may also be a reason for the increase in cases of diabetes and cancer.

Researches from AIIMS have found that the river is awash with antibiotics and chemicals used in household floor cleaners. Most of the antibiotics detected in the water samples are prescribed for cold and flu, respiratory tract infections, pneumonia and tuberculosis.

Dr T Velpandian, lead researcher of the study, said the concentration of drugs in water may be causing many serious diseases.

"My parents are not diabetic. Still, I have got the disease. Lifestyle alone cannot be the cause of it. There is emerging evidence for the role of environmental factors in it. Antibiotics that enter our food chain through water sources could be one," he said.

The water samples were collected along the river at Yamuna Vihar, Jasola, Kalindi Kunj, Indraprastha Station, Noida Bridge and Wazirpur border.

"We initially thought only the samples collected from spots near a health facility would test positive for

DANGER ELEMENTS IN RIVER

PLACES FROM WHERE THE WATER SAMPLES WERE TAKEN Yamuna Vihar, Jasola, Kalindi Kunj, Indraprastha station, Noida bridge and Wazirpur border

THE COMPOUNDS THEY WERE TESTED FOR

- Antibiotics such as norfloxacin, ofloxacin, gentamicin, amoxicillin and azithromycin, among others
- High-volume chemicals: Paraquat (weed killer used in farming), Tetraethylammonium (industrial waste) and Benzalkonium chloride (chemicals found in floor cleaners)
- Pralidoxime, a rare drug used as antidote in poisoning cases

IMPACT

- The researchers grew chickpea in normal water and those contaminated with antibiotics to assess the impact. While the former grew well, the latter was found to have retarded growth



FINDINGS The presence of antibiotics was confirmed through test of the samples; significantly high levels of chemical used in floor cleaning was also found in the water

- On human beings, doctors say, further researcher is needed to assess the possible link between presence of antibiotic in the environment and increased incidence of diabetes and cancer

THE WAY OUT

- The fluid waste being drained into Yamuna must be treated
- Disposal of medical waste, particularly the antibiotics used at home, should be proper. It shouldn't be thrown into the drain
- Strong policy measures, such as ban on over-the-counter sale of high-end antibiotics must be enforced

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bio-active compounds such as antibiotics. But we found all the samples had antibiotic residue. It could be because most people throw away

their unused antibiotics and these find their way into the river through the connecting drains. Faecal contamination is another route," Dr

Velpandian, who is an ocular pharmacologist at AIIMS, said, adding that household disinfectants are also adding to the river's burden of harmful chemicals.

The study also showed that water polluted with antibiotics retards plant growth. The researchers grew a batch of chickpeas (chhole) in clean water and another in water containing antibiotics. The second

batch of plants was stunted. "The impact in humans could be worse," said a researcher.

Doctors say wastewater should be treated before it flows from the drains into the river and people should be educated about safe disposal of unused drugs and industrial waste.

Dr M C Misra, director, AIIMS, said there is rampant misuse, abuse and overuse of antibiotics in India. "If urgent action is not taken to check this, we might be staring at a health crisis. In the last decade no new antibiotics have come up while the existing ones are proving ineffective in treating many patients," he said.

To highlight the issue of widespread misunderstanding about antibiotic resistance, World Health Organisation recently conducted a survey.

About 75% of the respondents in India, the survey revealed, believed cold and flu can be treated with antibiotics, which is incorrect.

The survey, conducted in 12 countries and released in Geneva on Monday, also said that in India, only 58% of the respondents know that they should stop taking antibiotics only when they finish the prescribed course. Dr Misra said antibiotic resistance is a global health crisis but countries like India are more at risk due to the higher burden of infection necessitating antibiotic usage.