

we have to go for second and third generation cephalosporins although they are much more expensive."

Common diseases such as typhoid and malaria are also defying treatment in many cases. *Salmonella typhi* is the major cause of enteric fever in Bangladesh. Resistance to commonly used antibiotics like cotrimoxazole and ampicillin has led to the introduction of third generation cephalosporins and fluoroquinolones for the treatment of enteric fever.

"The situation is getting worse as the population increases, and a strain is put on the healthcare system," says Prof Abdur Rashid. "We must act now to regulate the use of antimicrobial drugs. Every pharmacy should have a graduate pharmacist who will dispense medicine. The universities are turning out graduates with B.Pharm who would be ideal for this. Some universities are offering a 3-year diploma, which is also quite effective."

Dr. Liaquat Ali Chowdhury, Deputy Secretary of the Pharmacy Council agrees that a major overhaul of the system is necessary. "Currently it is mandatory for every pharmacy to have a C-grade Community pharmacist with 3 months training. This is the bare minimum. Without a registered pharmacist, a drug license cannot be issued to a pharmacy under the Drug Ordinance 1982. But that rule is being violated."

Abdus Shahid, a 42-year-old businessman went to his local pharmacy suffering from pain in his leg. "The man behind the counter gave me a tablet called Ibuprofen. After taking it, I began to have severe pain in my stomach."

The owner of the pharmacy had given Shahid an NSAID (non steroidal anti-inflamatory drug) completely unaware that he was suffering from gastric ulceration, a condition worsened by NSAIDs.

Within a few hours, Abdus Shahid started to bleed from his gastrointestinal tract. He had to be hospitalized for a week where doctors treated him with anti-ulcer drugs.

"I have learnt my lesson the hard way," says Abdus Shahid. "I now know why doctors take a patient's history and perform a full physical examination. It is not just about prescribing medicine."

"Pharmacy owners verbally advise people to take antibiotics for common illnesses such as cold or diarrohoea," says Dr. Shamsuddin, formerly professor of medicine at Bangabandhu Sheikh Mujib Medical University. "But colds are caused by viruses, so antibiotics have no effect on them. Another common mistake is taking Flagyl for diarrhoea. Diarrhoea can be caused by many organisms. Flagyl only works for amoebic dysentery. These dangerous practices cause these important drugs to lose efficacy."

Dr. Mujibur Rahman adds: "Non-compliance is also a major problem. Patients who take medicine from pharmacy without prescription often stop taking the drug after they feel better, because they don't have a doctor monitoring them. They don't complete the course, which causes the bacteria to become resistant."

Doctors say patients should know that prescriptions must be strictly followed because bacteria acquire resistance to antibiotics through exposure to low doses.

"Antibiotic resistance is a public health problem that needs our urgent attention," says Prof Shamsuddin. "We must avoid indiscriminate use of antibiotics, and rely more on vaccines and hygiene to prevent disease. A simple thing like hand washing can prevent many infections. Public awareness and government vigilance are necessary to regulate the use of lifesaving drugs."

The WHO has geared up to fight the imminent threat of microbial resistance by formulating a Global Strategy that ranges from disease prevention and the appropriate use of antimicrobials to the need for appropriate legislation and surveillance. Physicians are calling on the pharmaceutical industry to focus research on developing new antibiotics. ■

The problem is exacerbated by several factors, including abuse, underuse or misuse of antimicrobials, poor patient compliance, and poor quality of available drugs. The situation is particularly dangerous in countries like Bangladesh where the indiscriminate use of antibiotics is widespread.