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Antibiotic overuse: disaster in the making

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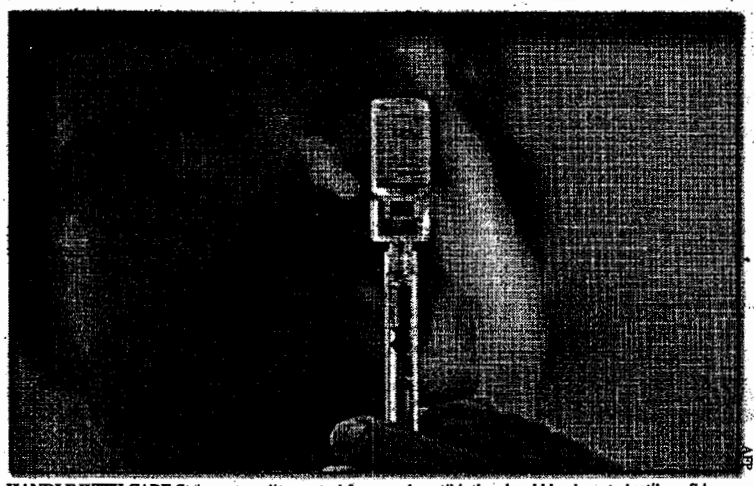

HANDLE WITH CARE: Stringent quality control for generic antibiotics should be done to instil confidence among its users and thereby reduce financial load on patients

SCOTTISH biologist Alexander Fleming invented penicillin in 1928. At the time of its creation, he did not have the faintest idea that he was about to create history. But that's exactly what he did. The beginning was extremely good as penicillin saved many lives in World War II and thousands of units of the drug which was subsequently produced, perpetually remained in short supply, as compared with the demand it generated.

The journey was even more spectacular when more research molecules were added to the anti-microbial armament of the clinicians. Now, they could treat with promise and predictability. But just when everything was going on course for researchers, academicians and patients, economics added a new dimension to the whole story and somehow changed its trajectory. Suddenly profits took front seat and controlling infection was relegated to the background. Big pharma companies started pushing sales of their antibiotics through rampant use in the US and physicians were cajoled into introducing high-pressure sales techniques.

The result is that today 45-70 per cent of viral infection patients are subjected to antibiotics; it is common knowledge that viral infections are self-limiting and don't need antibiotics. Consequently, prescriptions were loaded with third and fourth generation antibiotics when infection could be easily tackled with first and second-generation medicines.

The irrational use of antibiotics has two aspects — one, greed; and the second, ignorance. Both reasons make up for a deadly combination of resistant strains of bacteria and microbes to grow. For us in India, it presents a gigantic challenge.

A study titled 'Global Trends of Antibiotic Consumption 2000-2010' shows a staggering 36 per cent rise in the use of antibiotics in India between 2005-2010 and is estimated to increase further. Three fourth of global antibiotics are consumed in five Brics countries, with India at the top.

The situation is so alarming that for carbapenams, the world's most powerful antibiotic, national retail sales have jumped from 0.15 standard units per 1,000 population in 2005 to 3.8 standard units per 1,000 in 2010 and is estimated to reach around 6 standard units by 2015.

This is by far the steepest gradient in the world. Nobody appears unduly bothered about the impending disaster from this multi-drug resistant strain. The issue of preventing hospital-acquired infections by sanitation and good infection control practices is also taken casually. A careful approach can minimise the enormous antibiotic consumption and future threat of bacterial mutations.

In 2010, *Lancet*, a British medical journal, startled the world about news of a super bug in Delhi's water supply system. Later, the super bug infection was reported from select hospitals of India. The report was based on accounts of one or two western patients who were infected. This super bug was resistant to all antibiotics, including carbapenams. Although, the bug in water supply news could not be established, it is difficult to predict when it could turn into a reality.

The bad news is that just when things are turning for the worse, there is hardly any addition of new antibiotic molecule to kill the resistant strains in the past few years. Ominously, we are heading for tough times, particularly in the wake of present drugs losing their cutting edge due to overuse. It is not uncommon to see ultimate antibiotics like carbapenams and colistin, once used for critical care, now being used for simple infections.

In absence of much-needed reforms, it is quite likely that we may be left with no weapons. Already the cost of higher antibiotics is creating havoc for poor and middle class patients. The cost of carbopenam is pegged at Rs 4,000 a day while colistin costs Rs 3,000.

In contrast, cephalosporins and fluoroquinolones cost much less for patients. Clearly, no stone should be left unturned to save the sanctity and effectiveness of early generation antibiotics for routine infections. It is not that policy makers, physicians and the pharma industry do not appreciate the need for a clear-cut policy in this regard, but the fact is that piecemeal efforts in the past have not borne fruit.

A laudable effort by the global antibiotics resistance partnership (GARP) to suggest actionable policy recommendation for the precarious Indian situation was undertaken in 2011. Alas, they were never taken seriously at any level.

There is urgent need for a water tight and comprehensive national antibiotic policy. The government must not just lay down guidelines but also oversee their implementation. Some proposals could include: (1) Prevention of infection rather than cure should be top priority; (2) A comprehensive education and awareness programme for masses needs to be launched using the print and visual media; (3) Doctors' bodies need to develop a consensus around the MCI guidelines. A committee comprising of director general of health services and their state counterparts can frame fresh guidelines after discussions with stakeholders; (4) No sale should be allowed without prescription from chemist shops; (5) Third and fourth generation antibiotics should only be used in hospitals after advise rendered by consultants and not junior doctors; (6) Pharma associations, Indian Pharmaceutical Association (IPA) and Organisation of Pharmaceutical Producers of India (OPPI), must be taken into confidence to check high-pressure sales. Set up guidelines for pharma companies with deterrents like penalties and the threat of cancelled licences; (7) Stringent quality control for generic antibiotics should be done to instil confidence among its users and thereby reduce financial load on patients.

(The writer is chairman Arthritis Foundation of India)

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