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Doctors are responsible for 10% or less of global misuse of antibiotics

Antimicrobial resistance (AMR) is considered one of the most significant challenges the world faces today. To keep it simple, let us use the term superbug crisis instead of AMR. Globally, thousands succumb to untreatable superbug infections on a daily basis. Irrational antibiotic usage is a major reason behind this.

Major causes

Are doctors to blame for the crisis? Excessive usage of antibiotics creates resistance, and doctors are notorious for this. But it may surprise many that over two-thirds of the antibiotics manufactured by the pharmaceutical industry are used as growth promoters for poultry and cattle. An article published this year in *Science* points out that globally 73% of all antimicrobials sold are used in animals raised for food.

The remaining one-third is used to treat human ailments. Of this, the common public purchases more than half without a doctor's prescription, according to WHO. That leaves us just 15% of the global antibiotic production for the doctors to use and misuse. Let us say doctors utilise half of this for rational indications. Hence, doctors have to bear the cross for 10% or less for global antibiotic misuse.

Antibiotic stewardship is considered to be the most important intervention to tackle super bug crisis. A remarkable, though unachievable, 100% success of antibiotic stewardship among doctors to rationalise antibiotic use can correct only one-tenth of the global antibiotic misuse. Should we not invest our limited resources and efforts in other more fruitful components?

Over the last 10 years, antibiotic stewardship efforts by various medical societies in our country and other stakeholders including the Chennai Declaration have significantly raised awareness of the super bug problem among the medical community. It is doubtful whether this awareness translated into rational antibiotic usage. Lack of infrastructure and inadequate diagnostic facilities in our health-care sector is one of the major triggers of the irrational antibiotic use by doctors and the public. Unless we correct the root causes, it is very unlikely that in a country like India with a million doctors and half a million pharmacies, rational antibiotic usage can ever be implemented.

I do not dare question the relevance of antibiotic stewardship as a patient safety measure. Rational antibiotic use is choosing the right drug at the right dose at the right time. No doubt this is one of the cornerstones of modern medicine practice. Successful antibiotic stewardship programmes may make some impact in countries with good sanitation standards. However, it is doubtful whether this component will make any real difference in superbug rate in developing countries.

Priority factors

Improving cleanliness in hospitals and sanitation in the community is much more important than antibiotic stewardship. In countries with high existing superbug rate and sanitation issues, rational antibiotic use, unless it is comprehensive, may not help reverse the rate or halt its progression. There are many scientific publications that underscore this argument. There is no conclusive evidence to support antibiotic stewardship as an effective measure to

reduce the Gram-negative superbug bacteria, such as *E. coli* and *Klebsiella*, the most prevalent group in South Asia.

Mistaken notion

Unfortunately, the medical community is under the erroneous impression that doctors created the superbug crisis. It is high time doctors come out of this. The medical community must emerge from the never-ending antibiotic stewardship rituals, especially those backed or orchestrated by the pharmaceutical industry. Doctors are the most enlightened ones on superbug crisis. If they don't realise their own folly, future generations will indeed blame the medical community for the superbug crisis, but for an entire different reason — self-deception!

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