Emerging Antibiotic Resistance in Indian Communities

Sir—I have recently reported a comparison of antibiotic resistance among bacterial isolates in hospitals in India and the United States. This finding indicates an underrepresentation of the reality in India, where community clinicians prescribe antibiotics to their patients without performing any cultures of the realities in India, where community clinicians prescribe antibiotics to their patients without performing any cultures of pathological specimens. Moreover, health care facilities in the Indian public sector contribute to just 1.3% of the health care expenditure of the gross domestic product, while facilities in the private sector contribute to 4.7% [2].

Private health care establishments deliver essential clinical services to low-income households in the poorest countries and are preferred to government facilities by most of the population [3]. Without an appreciation of the magnitude of antibiotic resistance patterns among bacterial strains isolated from specimens obtained at private health care facilities, it would not be feasible to compile figures about emerging antibiotic resistance for a comparative analysis.

Many of the people, including physicians and patients, in developing countries might be inadvertently contributing to the emergence of antibiotic resistance by using antibiotics of poor quality and potency. This lack of quality became evident after an analysis of 137 brands of acetaminophen, ampicillin, co-trimoxazole, and vitamin B preparations being marketed in different regions of Bangladesh [4]. Investigations of residual potency revealed that there were 37 substandard brands being offered to the public. Of the 16 brands of acetaminophen and 10 brands of ampicillin that were found to be substandard during the analysis, 11 brands and 8 brands, respectively, had already been assessed as substandard by the regulatory authorities.

Use of inappropriately low doses of antibiotics in the community would promote selection of subpopulations of bacteria that

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would grow efficiently in higher concentrations of antibiotics [5]. Incomplete treatment because of poor patient compliance in relation to quantity and duration of antibiotic therapy leads to antibiotic resistance in Mycobacterium tuberculosis and pathogens in surgical abscesses and drainage wounds [6]. The role of subpotent formulations of the least expensive antibiotics, as well as the most expensive antibiotics, in the emergence of antimicrobial resistance and in therapeutic failures should be better evaluated in developing countries. Such resistant strains could be disseminated globally by international travelers and tourists who visit such areas.

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References

Reply

Sir—Dr. Arya is of course correct that the data collected from only a few facilities cannot be expected to reflect accurately the entire spectrum of antibiotic resistance in any country. Be that as it may, our data collected from both public and private hospitals were surprising in that they do not support the common preconception that a much higher prevalence of resistance might exist in India for several reasons, including those suggested in his thoughtful letter. So far, the data suggest otherwise, but, clearly, further studies are needed and are being designed. We welcome collaborators.

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