Correspondences

Save Antibiotics for Future of Mankind

Sir,

The life saver in most of the infectious diseases especially bacterial infections in the medical practice of modern medicine is an antibiotic, a well known fact. The role of antibiotics and their utility is unique to modern medicine though lot of medicinal plants were and are used in Siddha system of medicine with the same type of action without scientific validity for thousands of years. The use of garlic and onion in wound dressing along with turmeric as a paste is a common practice in Tirunelveli and I have observed the same while my mother Mrs. S. Gomathi Ammal was doing the dressing with such ingredients. I myself was a beneficiary of that treatment while I was a young boy and whenever I had cuts due to glasses in the sole of the feet. There was no Tetanus Toxoid at that time and people use rarely the anti-tetanus serum of horse origin because of the fear of allergic reactions. This source of medicinal plants needs to be explored by scientific community for future.

Later, while I was in III year MBBS, along with my friend Dr. K. Venkataraman, I have convinced Prof. Dr. Ramajeeyam to do an experimental work of garlic in a Petri dish with a colony of streptococci (I believe) in 1974. There was a clearance in the streptococci around the garlic peel. These experiments were not continued by me due to studies. Later, Dr. Ganapathi Sundaram, our Asst Professor at that time while became Professor of Microbiology along with Dr. Gomathi published some of the findings of similar nature.

With the advent of chemotherapeutic agents like sulpha drugs in Germany and the Penicillin as the first antibiotic introduced in modern medicine by the great Dr. Alexander Fleming, though it was an accidental finding, the practice of modern medicine was for a sea change. Fleming’s accidental discovery and isolation of penicillin in September 1928 marks the start of modern antibiotics. The spectrum of antibiotics and the growth of pharmaceutical research and the growth of the industry are well known events.

The problem of finding an antibiotic is really a difficult research in medical basic sciences since the advent of resistance to antibiotics. This was even noted by Fleming himself. Fleming also discovered very early that bacteria developed antibiotic resistance whenever too little penicillin was used or when it was used for too short a period. Fleming cautioned about the use of penicillin in his many speeches around the world. He cautioned not to use penicillin unless there was a properly diagnosed reason for it to be used, and that if it were used, never to use too little, or for too short a period, since these are the circumstances under which bacterial resistance to antibiotics develops. These are prophetic words of great visionary Fleming even now for all doctors to follow.

The present problem is the same as noted by Fleming. The misuse or underuse of antibiotics are rampant in India is recently brought to notice by the discovery of pan resistant gram negative bacterial infections which is named as New Delhi Metallo-B Lactamase (NDM-1) in enterobacteriaceae especially to Carbapenems and identified in England (Journal of Association of Physicians of India- March 2010 issue).

The reasons for such resistance are related to the same points as noted by Fleming himself.

1. Too little dosage of antibiotics: I have seen prescription of cefotaxime for meningitis by a neurologist and a physician team for a girl child in half the therapeutic dosage in a corporate hospital, a decade ago and because of that she developed, double vision (Diplopia) with high fever while on treatment. She was later treated only by crystalline penicillin by me and became alright in the house itself due to non-affordability of a private hospital and not willing to go to govt hospital. But unfortunately the lady doctor who has referred the case to neurologist (who was later declared as a neurologist of repute by a Chennai based TV- what a commercial angle going on in practice at our India.) commented that I am not eligible to deal such cases, to the relatives. What a respect for successful treatment in Tirunelveli circle of doctor community.

I have noted lot of medical practitioners using a single day cefotaxime as a fancy dose for the treatment of vial fevers to impress upon the patients as a form of costly treatment especially in villages and rural areas for the past decade. I have no idea, how to educate such misuse of antibiotics. Even the gentamycin is used as a single dose per day therapy as per the convenience of the doctor concerned since he/she will be available for consultation once a day only. I remember when I was a house surgeon in 1977, the chief of the unit had to certify the use of gentamycin, that too 40 mg BD dosage for severe infections especially in surgical wards. Because the cost of the drug at that time was RS. 35-40 per vial containing 80 mg/2 ml, where as the doctor’s salary was below thousand rupees a month, at that time. Today it is available for below seven rupees and so used as and when needed by all including quacks and even medical shop chemists.

2. Short period of usage: Most of the time the prescription for antibiotics even in a case of typhoid fever is given for a day or at the maximum for three days. The nature of the illness and the necessity to take antibiotics for how many days are rarely explained to our patients. Even if explained, the patients may cut short the actual course is a problem in our country. This is the case with even Pulmonary Tuberculosis (PT). I remember a patient with Diabetes and PT who was earlier treated by a cardiologist of a corporate hospital in our place (three years ago, it happened) was asked to stop the drug by four months and patient was retreated by me later. Fortunately, PT has not become resistant to first line of therapy.

3. Proper Diagnosis before treatment: Diagnosis with antibiotics wanting even in big corporate hospitals. Recently I came across a patient who was diagnosed as hilar lymphadenopathy of tuberculous origin in a famous corporate hospital at Chennai without proper analysis of the case. Finally, he was not suffering from tuberculosis, but took treatment for the same. This was pointed out by Fleming himself is a fact to remember.

4. Commercialization of prescription: I know a hospital or two in Tirunelveli is using Meropenam regularly – every month roughly two hundred vials because of the benefit the hospital gets. For every vial used, the hospital earns
a profit of thousand rupees. This is the strategy used by Pharmaceuticals marketing the brand. That is why, the present situation is developing.

5. **Use of steroids in fevers:** I know even a USA returned paediatrician uses betamethasone for fever and, I have noted and wrote an article of Widal test speeding up in typhoid fever in such cases a decade ago. Almost most of the practitioners use steroids in one form or other. That is also another reason for the development of resistance in India and needs in depth study.

There is a very good editorial article in JAPI of March 2010 issue by Dr.K. Abdul Ghafur of Apollo Hospitals, Chennai -“An obituary- On the death of antibiotics” which every medical practitioner should read for the sake of future of antibiotics. Will our conscience prick to make us vow to avoid misuse of antibiotics in the next case, one is going to see.

The only way out to save the antibiotics is to make the prescription by the medical profession to be scientific and stringent actions against medical stores which dispense antibiotics without prescriptions and also the quacks to be eradicated.

Apart from finding new antibiotics, the alternative in medicinal plants need urgent research to identify newer molecules for avoiding disaster if all are infected with resistant antibiotics in the decade to come.

The reference to honey, yoghurt and cow’s urine in the article by Ghafur is an unwanted one since, I hope he has not gone through the articles related to use of honey in bedsores management and the use of honey in so many medical conditions have been scientifically worked out. The same way the other things may be useful to be explored. Let him understand, the problem of resistance was noted even by Fleming while penicillin was used in other than Indian countries. I fully agree that Indians misuse but throughout world, the same problem is there and only the percentage varies. So, the medical community in India as well as other countries should take it as a priority like the global warming scenario and come out with methods to prevent resistance development.

As a Senior Physician, my advice is do not get into the rat race of one up than your colleagues to prove yourselves to the pharmaceutical companies or medical representatives, that you are a good prescription doctor for getting some monetary benefits which are prevented by recent IMC rules but be truthful to the patients who bestow their life in your hands. If given an opportunity, I am willing to conduct workshop to all the doctors regarding the use of antibiotics which I have discussed with some of my friends some fifteen years ago for preventing misuse of antibiotics or bring out a monograph on the same topics by the journals concerned. Governments both Central and states, Indian Medical Council and state medical councils, medical associations and medical college professors and all interested in creating better awareness on antibiotic resistance should join hands to fight this grave situation effectively.

**S Shanmugam**

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**References**


**Death of Antibiotics, An Obituary**

**Sir,**

Your editorial article by Dr. Abdul Gafoor is timely, eminently readable with very good prose, uncommon among Medical Community, but rather alarming, even cynical, if not harsh, particularly the last paragraph! Having said that, we cannot disagree with the contents of the article and its message and our share of responsibility. The misuse, abuse, under prescription, over prescription and non compliance, is a world wide malady and our contribution is no less.

So many factors, noted every day, by most Clinicians, contribute to this malady. To name only a few,

1. Poor communication at primary health care level (between GP and patients) resulting in frequent visits to different doctors for the same illness.
2. Monetary factors / Monetary pressures.
3. Patient’s anxiety and eagerness to get back to normal, particularly in un-organized sector, daily wage workers, for fear of loss of wages.
4. Prescribing habits influenced by pharmaceutical companies, by factors other than, result oriented therapeutic outcome.
5. It is needless even to mention the rampant abundance of fake drugs on the Indian market! Leaving the hapless patients helpless, with clinicians finding themselves helpless too, at times, leading to frequent change of medication.
6. Last, but not the least one of the major cause for under use of antibiotics and non compliance is the affordability factor, socio-economic conditions of the under privileged.

These are only a few factors commonly experienced by all of us. But I would not like to share Dr. Gafoor’s pessimism or cynicism. Awareness of the above mentioned factors by practicing clinicians itself, should mitigate the condition and hopefully post pone the death of antibiotics. Anyway, congratulations Dr. Ghafoor - your article is timely and well taken. Yes, we should all be concerned and address the issue.

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**Reply from Author**

**Sir,**

The editorial “An obituary- On the death of antibiotics” gave me the opportunity to discuss with my fellow Indian physicians on the catastrophic antibiotic resistance situation. Shortly after the publication of the editorial, I received communication from many physicians, sharing their concern on the importance and gravity of the antibiotic resistance. This collective response gave me a glimmer of hope and somewhere deep in my pessimistic mind I felt warmth of optimism.

It is indeed a pleasure to read the letter from Dr.Raghavendra, the words of a sincere and optimistic physician who has understood the magnitude of the problem. I do completely agree with Dr.Raghavendra that there is an allusion of...
pessimism and sarcasm in my article. The utter hopelessness of the resistance situation and the lack of any initiative by any medical professional body or society in India or by the Indian Government (central and state Governments, irrespective of the colour of their flags), can only make an ordinary human being pessimistic and the humble realisation that no productive actions will be taken in near future can generate sarcasm.

Infectious Diseases Society of America and British Infection Society are professional bodies in the west, with wholehearted involvement of all members of the medical community with active interest in the issues of infection and antibiotic resistance. India being the gold medallist in the resistance marathon, do not have a reputed infection society. There is a serious need of a society with sincere and dynamic participation of members of all relevant branches of medical, surgical and basic sciences specialities. In contrast to United states or UK, where there are sufficient number of infection specialists and relatively fewer number of infections, in India we have plenty of infections and a few small number of infection specialists. It may take a decade or two to train enough number of specialists in the field and even then, the bread and butter being tropical infections, general physicians will have an irrefutable and essential role in the management of these diseases. Managing hospital acquired infections, especially in the era of antibiotic resistance require specialist training and we need more and more physicians to come forward and express interest in the field of infection especially hospital infection and infection control. Association of physicians of India must play the leading role in laying foundation of an infection society.

Mere awareness of the contributing factors alone will not be sufficient to alleviate a problem. Only a revolution in the brain and the heart of the Indian medical community with sincere attempts to make a change can save the antibiotics which remain.

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