

EDITORIAL

Antibiotic resistance: Homoeopathic perspective

According to a World Health Organization (WHO) report, the infectious disease accounts for 43% of the global burden of diseases.^[1] Various deadly bacterial diseases such as tuberculosis (TB), which were treated and well managed by antibiotics in past are now becoming drug resistant. Due to increasing antibiotics resistance or anti-microbial resistance (AMR), WHO has raised global concern about it and warned about an imminent global crisis thus, first World Antibiotic Awareness week was observed from 16th to 22nd November 2015. The campaign aimed to increase awareness of global antibiotic resistance and to encourage best practices among the general public, health workers, and policy makers to avoid the further emergence and spread of antibiotic resistance.^[2]

WHAT IS ANTIBIOTIC RESISTANCE?

Antibiotic resistance is the ability of bacteria or other microbes to resist the effects of an antibiotic which occurs when bacteria change in some way that reduces or eliminates the effectiveness of drugs, chemicals, or other agents designed to cure or prevent infections. The bacteria survive and continue to multiply causing more harm.^[3] Bacteria, not humans become antibiotic resistant. Overuse and misuse of antibiotics increase the development of resistant bacteria. Almost every type of bacteria has become stronger and less responsive to antibiotic treatment when it is really needed.^[3]

CURRENT GLOBAL SITUATION

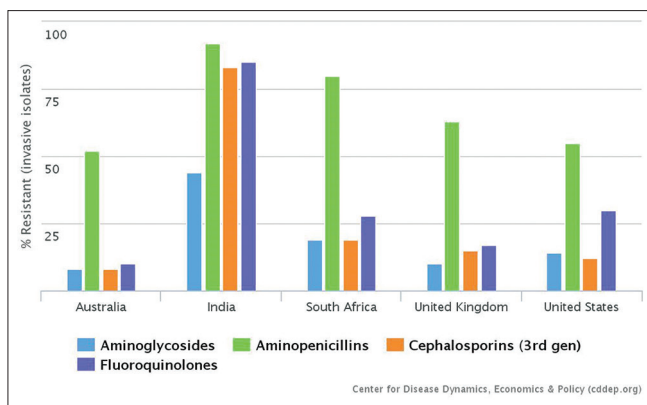
Antibiotic resistance is one of the biggest threats to global health today. It leads to higher medical costs, prolonged hospital stays and increased mortality. Antibiotic resistance is rising to dangerously high levels in all parts of the world. In the European Union alone, drug-resistant bacteria are estimated to cause 25,000 deaths and cost more than US\$1.5 billion every year in healthcare expenses and productivity losses.^[4]

Almost two-thirds (64%) of 10,000 people who were surveyed across 12 countries say they know antibiotic resistance is an issue that could affect them and their families, but how it affects them and what they can do to address it are not well understood. For example, majority believe antibiotics can be used to treat colds and flu, despite the fact that antibiotics have no impact on viruses. Close to one-third (32%) of people surveyed believe they should stop taking antibiotics when they feel better, rather than completing the prescribed course of treatment.^[5]

The report in *The Lancet Infectious Diseases* showed that between 38.7% and 50.9% of pathogens causing surgical site infections and 26.8% of pathogens causing infections after chemotherapy are resistant to standard prophylactic antibiotics in the USA. It suggests that increasing antibiotic resistance potentially threatens the safety and efficacy of surgical procedures and immunosuppressing chemotherapy.^[6] In 2014, 57% of *Klebsiella pneumoniae* isolated in India were resistant to last-resort antibiotic class carbapenems. In 2013, third generation cephalosporin-resistant *Escherichia coli* was reported in 35 countries, with the lowest resistance reported in Iceland (4.95%) and the highest in India (80.32%). Between 2000 and 2010, antibiotic consumption increased by 36%. Five countries, Brazil, Russia, India, China, and South Africa accounted for 76% of this increase in antibiotic consumption [Graph 1].^[7]

HOMOEOPATHY AS ADJUNCTIVE THERAPY IN REDUCTION OF ANTIBIOTICS USE

The germs seem to lead to illness primarily when the person's immune and defense system is not strong enough to combat them. The "cause" of disease is not simply an organism but also the factors that compromise host resistance, including the person's hereditary endowment, his nutritional state, the stresses in his life, and his psychological state.^[8]



Graph 1: Antibiotic resistance of *Escherichia coli*

Biologists call it “host resistance” and physicians refer to “susceptibility.”^[9]

Today, antibiotics are prescribed more frequently for many self-limiting illnesses and viral infections such as cold, flu, or fever where they do no good. For many such illnesses taking Homoeopathy can be beneficial as it acts by modulating the host immunity. Treatment is effective, and further recurrence of disease is reduced. Some experts say we are moving back to the post-antibiotic era means, in effect, an end to modern medicine as we know it.^[10] Homoeopathy has been treating infectious diseases successfully since pre-antibiotics era. Successes seen in treating Cholera was one of the reasons that Homoeopathy rapidly grew in popularity and became established in Europe and India in the early 19th century. Various studies support that homoeopathic treatment is equivalent in effectiveness to antibiotics for certain human infectious diseases.

The American Academy of Publications published a guideline on the diagnosis and management of otitis media in children stating that homoeopathic remedies as possible treatments for reducing otalgia, with the admonition that there are limited data on their usefulness in children with otitis media.^[11,12] Based on this, a study was carried which validated this recommendation and concluded that homoeopathic ear drops may be effective in reducing the use of antibiotics in children with acute otitis media managed with a delayed antibiotic approach.^[13] Study on homoeopathic treatment in addition to standard care in multi-drug-resistant (MDR) pulmonary TB suggests add-on Homoeopathy in addition to standard therapy appears to improve outcome in MDR-TB.^[14]

Clinical research suggests that Homoeopathy is effective in the treatment of upper respiratory tract infections in children, a frequent cause of inappropriate antibiotic prescribing. The EU recommends the use of Homoeopathy in organic animal husbandry, and it is used by significant numbers of farmers.^[15] In another study on Homoeopathy as a replacement to antibiotics in the case of *E. coli* diarrhea in neonatal piglets, it was shown that Piglets of the homoeopathic treated group had significantly less *E. coli* diarrhea than piglets in the placebo group ($P < 0.0001$).^[16] The published scientific evidence establish that Homoeopathy can be promoted as the first line of treatment for common day to day infectious diseases. Thus, the emerging AMR can be tackled with Homoeopathy as adjuvant therapy for infectious diseases.

HOMOEOPATHY AND NON - COMMUNICABLE DISEASES

In the last few months, in addition, with AMR, the considerable attention of medical fraternity and health researchers has been drawn towards noncommunicable diseases such as cardiovascular diseases, diabetes, and observed world heart day and world diabetes day on 29th September and 14th September 2015, respectively. There is a potential of using Homoeopathy in these diseases as well.

Homoeopathy and Diabetes

India has about one-sixth of the worldwide population of patients with diabetes.^[17] Homoeopathy has been integrated into the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Disease and Stroke and continuous research is going on to find a lasting solution to the ever growing problem of diabetes. *Gymnema sylvestre*, a traditional medicinal plant has reported use as a remedy for diabetes mellitus. In this issue, we present a study on antioxidative and antiglycation potential of *G. sylvestre* in mother tincture, 6C and 30C potencies. The results suggested that homoeopathic preparations of *G. sylvestre* had potent antioxidant and antiglycation activity.^[18]

Dyslipidemia

A short review article exploring the possibilities of management of dyslipidemia in Homoeopathy is embraced in the current issue. Four preclinical, three observational studies, and two case records were identified, and the result of these is summarized.

As discussed in this review, further research is warranted to establish precise role of Homoeopathy along with lifestyle modification as a comprehensive approach toward its treatment. protocol on the effect of the individualized homoeopathic intervention in dyslipidemia: An open-label randomized controlled exploratory trial is given. This study protocol is designed as a randomized controlled trial with comparator arm as placebo along with Therapeutic Lifestyle Changes in both groups and shall help in generating evidence about the role of homoeopathic intervention in dyslipidemia. The study is in the pretrial phase in which 1469 patients have been screened, and 156 patients have been enrolled till date.^[19]

Cancer

Recent researches have indicated the probable role of homoeopathic medicines in modulating immune response, thereby causing cancer cell death and treating cancer. Three different researches conducted on mammary epithelial non-small cell lung carcinoma cells and to observe the effect of homoeopathic medicines, *Calcarea carbonica*, *Thuja* and *Sulphur* have revealed that homoeopathic medicines induce apoptosis in cancer cells in p-53 dependent manner via an immune-modulatory circuit. Even though further investigations and clinical trials are needed, these studies have revealed the unique cancer-fighting properties of homoeopathic medicines which are activated through body's own defense system. Future researches aim at exploring the role of homoeopathic medicines as an adjuvant therapy in a range of illnesses, especially in diseases like cancer, where either the treatment options are limited or not devoid of severe side effects.

In this issue, we are publishing reprint article titled "Sulphur alters NFκB-p300 cross-talk in favor of p53-p300 to induce apoptosis in non-small cell lung carcinoma" jointly conducted by Bose National Centre for Basic Sciences, Kolkata, Bholanath Chakrabarty Trust, Howrah and Central Council for Research in Homoeopathy. The outcome has been originally published in International Journal of Oncology but, for wider dissemination of research outcome to those who are exclusive Indian Journal of Research in Homoeopathy subscribers and physicians/researchers of different fields including Homoeopathy with an interest in above-mentioned topic; this will be of immense use.

Drug Proving Questionnaire

In India, students in Homoeopathy Colleges are motivated to participate in drug proving programs. The authors of this paper studied their concerns and designed a questionnaire to identify the knowledge, attitude, practice, and beliefs of Homoeopathy students. The students were aware that with their participation in drug proving program not only homoeopathic Materia Medica will be enriched, but the students will also benefit by gaining experiential knowledge rather than theoretical knowledge of philosophy. At the same time, they were hesitant to participate due to the fear of developing severe unmanageable symptoms during drug proving. This instrument can be used to identify the student perspective about drug proving and also to assess the change in their perspective after drug proving enrolment motivational programme.

Clinical Verification Study

The symptomatic data produced during proving of the drugs on healthy human volunteers need to be clinically verified by prescribing it in the clinical settings. Clinical verification is an ongoing research programme of the council that has verified many rare homoeopathic drugs. This issue publishes results of a multicentric observational homoeopathic clinical verification study of *Mygale lasiodora*. First introduced and proved by Dr. J. G. Houard, of Cuba, *M. lasiodora* is a large black spider, native in the island of Cuba and commonly known as Bird spider (Black Cuban Spider). Total 34 available symptom/s were verified, and 47 new symptom/s were identified.^[20] Further, read about a case report of "A Case of deep vein thrombosis with post-thrombotic syndrome cured by homoeopathic therapy" and Book review of "Chronic Diseases- Dr. A.K. Das" which is recommended for both undergraduate and postgraduate students and teachers of Organon.

I wish all the readers a very Happy, Healthy and Prosperous New Year.

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