

## Enriching the science of Homoeopathy

Hippocrates wrote about the cure of diseases by following the principle of ‘like with like’ more than 2000 years ago, but it was formally systematised by Hahnemann through heroic experimentation on self, friends, family members and patients. He viewed health as a dynamic process tending to maintain a state of optimum equilibrium. Homoeopathic medicines are aimed to direct and stimulate the body’s self-regulatory mechanisms. The Homoeopathy emerged not in opposition to the biosciences but rather as a humane and relatively safe-model of medical practice at a time when ‘conventional’ medicine was both primitive and brutal in form, frequently lethal for patients.<sup>[1]</sup> It can be stated that Homeopathy was eventually born as a most scientific system, based solely on the concepts and methods derived from scientific experiments. Single-blind, placebo-control designs, used today by both contemporary and CAM systems, were first put to biomedical use by Homoeopathy.<sup>[2]</sup>

### ART AND SCIENCE OF HOMOEOPATHY

In Hahnemann’s time, his medical concept was not too far from academic concepts rather was considered as the most modern biomedicine. Earlier a German chemist, physician and philosopher, Georg Ernst Stahl (1650–1734) was a supporter of vitalism and taught that the soul was the dynamic force in human beings; Paul-Joseph Barthez (1734–1806) was a French physician, physiologist and encyclopaedist who developed a take on the biological theory known as vitalism and assumed a principle of life moved the organs; Christoph Wilhelm Hufeland (1762–1836) conceptualised illness as resulting from various stimuli irritating the human vital force. Homoeopathy became heterodoxy when academic medicine shifted its reference from philosophy to natural science, undertook several experiments and formulated protocols for basic as well as evidence-based research while Homoeopathy did not change much with the time and thus could not keep pace with the biomedicine and today forms part of complementary and alternative medicine.<sup>[3]</sup>

The accurate application of fundamental laws of Homoeopathy depends on physician’s skills and art of individualisation and his understanding of actions of various drugs. The true art of a physician is to observe in each case the characteristic, unique symptoms to individualise and prescribe. Patients too value the quality of the practitioner–patient relationship and this holistic approach. Patients find these consultations empowering, enabling them to learn more about their own health.<sup>[4]</sup> While there is a need to further nurture the art of case taking, analysis and prescribing, the scientific aspect of diseases which is now well developed in biomedicines should be utilised, and standard treatment guidelines should be developed.<sup>[5]</sup> With

increase in popularity and extensive use of Homoeopathy worldwide, accurate scientific research is needed to provide additional evidence of its safety and efficacy.

Historically, homoeopaths without a theoretical foundation for their therapeutics that could compete with the supramolecular chemistry of the 19<sup>th</sup> century were unable to explain plausibly how and why their treatment worked, and since their ‘proofs’ were organised through history of particular cases, they were unable to demonstrate that these were in fact ‘proofs’ in any scientific sense.<sup>[1]</sup> Homoeopathic pharmacy defined as the art and science of identifying, collecting, preparing, preserving, evaluating, standardising and dispensing of medicines in a certain peculiar manner. It also embraces the legal and professional aspects and regulation of proper distribution of medicines.<sup>[6]</sup> The homoeopathic pharmacology remains most unexplored and is considered the controversial area as it establishes biological effects of ultra-high dilutions. Non-believers/rationalists argue that the reported clinical effects of such highly diluted remedies may only be ‘placebo’ or ‘psychosomatic effects’ as in such high dilution pharmacological effects are not plausible. However, a recent paper has shown the biological perspective of extreme dilutions of metal-based homoeopathic medicines.<sup>[7]</sup> The team of scientists has shown the hormetic cellular activation using high-potency metal-based homoeopathic remedies. The observed activation with homoeopathic remedies occurred at doses containing minuscule metal concentrations of a few femtograms/millilitre (fg/ml i.e.,  $10^{-15}$  g/ml) levels, approximately a billion-fold lower than the effect observed with synthetically prepared nanoparticles at mg/ml levels.

In our previous issue, an insightful paper based on a review of lifelong experimentation by an eminent Indian scientist Dr Khuda Bukhsh was published. He answered the frequently asked questions about Homeopathy i.e., how can the ultra-highly diluted remedies bring about spectacular physiological changes when administered to patients in absolutely micro-doses? and what could be the precise mechanism of their biological action?<sup>[8]</sup> To understand if micro-doses of ultra-highly diluted homoeopathic drugs could demonstrate their ability to influence the genomic repair mechanism, several controlled experiments have been conducted. The author has conducted series of experiments that illustrate efficacy of a potentised homoeopathic remedies in protecting against cytogenetic damage inflicted by same toxic chemicals (i.e., treating toxicity effects of different toxic chemicals with ultra-high dilutions of the same toxic substance) as per the homoeopathic doctrine ‘like cures like’ taking not only cytogenetical parameters but also some other scientifically

accepted parameters such as enzymatic and non-enzymatic proteins and other relevant genotoxic protocols.

Bukhsh's team has conducted an extensive trial involving nearly 200 people living in a high-risk arsenic-contaminated groundwater village which revealed that *Arsenicum Album* 30°C and 200°C could show signs of amelioration in respect of a large number of scientific protocols and toxicity biomarkers of arsenicosis. Another trial was done to assess if supportive treatment with certain potentised homeopathic drugs could bring improvement in health condition of thalassemia patients, particularly in respect of some haematological parameters. The results show positive modulation in blood parameters of verum-fed patients along with on mental health.<sup>[9]</sup> Several other studies that have shown anticancer/anti-hepatotoxic effects of ultra-high dilutions of homeopathic drugs are briefed in the review. The homeopaths need the scientific orientation to appreciate these results.

Further, an *in vitro* and *in vivo* evidence of anti-inflammatory homeopathic drug dilutions in restraining lipopolysaccharide (LPS)-induced release of pro-inflammatory cytokines was published previously. In this experiment, researches substantiate the protective effects of *Arnica*, *Thuja occidentalis* and *Bryonia alba* in homeopathic dilutions against LPS-induced cytokine elevations and oxidative stress.<sup>[10]</sup> The effects observed in these *in vitro* assays were further confirmed using *in vivo* LPS stimulation-induced cytokine release and oxidative stress in mice. Our team has tried to evaluate the antifungal activity of different homeopathic mother tinctures against the growth of *Candida albicans* and observed significant inhibitory activity against its growth. The results of the experiment done with *Syzygium jambolanum*, *Ficus religiosa*, *Ocimum sanctum*, *Allium cepa*, *Thuja occidentalis*, *Holarrhena antidysenterica* and *Eucalyptus globulus* are shared.<sup>[11]</sup>

## EVIDENCE-BASED MEDICINE

There are increasing calls for evidence-based medicine, the question of what actually constitutes evidence becomes even more pressing. Homeopaths experience this pressure and try to conform to demands of scientific evaluation.<sup>[3]</sup> This has led to Homeopathy arguably being more severely tested through double-blind, randomised controlled trials (RCTs) than any other therapeutic modality (including conventional biomedicine). Although on balance, the number of trials performed seems to favour Homeopathy, sceptics remain unconvinced and repeatedly call for yet more 'definitive' trials that 'prove' Homeopathy is no better than placebo.<sup>[12]</sup> However, as the method of RCTs is hardly applicable to Homeopathy's concepts, they call for better-adapted, yet still scientific, methods, and clinical experience remains as the most powerful point of reference.<sup>[13]</sup> Homeopathy has harnessed the 'gold standard' of blind RCTs and has suggested a degree of effectiveness for homeopathic remedies in the treatment of respiratory diseases; pollen allergies compared with a placebo

and have survived the attacks of sceptics and non-believers since the past 200 years.<sup>[1]</sup> We will remain doing so, if we continue to convert the clinically acknowledged results in a systematically conducted RCTs and observational studies.

Further, the validation of 'modern' homeopathic practice by reinforcing the law of similar and patient individualisation is important. Clinical verification data help in making our *Materia Medica* and *Repertories* more authentic over the years. As quoted by stalwart JT Kent 'By thorough and careful work we will someday complete a *Materia Medica* whose every symptom will have been repeatedly verified. Then, indeed, will our art become the exact science predicted for it. Such is the end for which we labour.' We also need to utilise the newly emerging study designs such as TwiCs<sup>[14]</sup> (trials within cohort) designs conduct pragmatic trials by utilising cohorts or registers for one or more major functions for trial conduct and prognostic factor research (PFR) which assesses the prognostic relationship between symptoms and personal characteristics and outcome of treatment. A paper on the role of PFR in confirmation and confirmation bias is also being published.<sup>[15]</sup>

This issue includes paper of retrospective study conducted to evaluate the effect of *Ruta* on annual myopia progression rate (AMPR) before, during and after stopping treatment in childhood myopia. The author observed that *Ruta* 3C was effective in controlling AMPR with no major progression after stopping the treatment.<sup>[16]</sup> Besides this, a preventive study done on sheep and goats to assess the protective role of *Anthraxinum* 200 in anthrax epidemic is shared with readers interested to know the role of Homeopathy in veterinary science.<sup>[17]</sup>

Keeping in view recent trends in Homeopathy, the theme of the National Convention held on World Homeopathy Day, 9–10 April 2017 was 'Enhancing Quality of Research in Homeopathy'. Detailed recommendations/action points emerged out of this convention were shared in the conference report.<sup>[18]</sup> The favourable clinical response that homeopaths see in their practice forms strong evidence base for conducting research and is crucial for the development of system. Hence, a case report on role of Homeopathy in fibroadenosis was published in the previous issue<sup>[19]</sup> and in radiation-induced mucositis in the current issue.<sup>[20]</sup>

With advancement of science, there is a growing evidence in favour of the Homeopathy; however, it deserves further investigation for its potential scientific and ethical merits. The concepts such as individualisation, dynamisation, potentisation etc., need to be revisited in context with current research trends. The experimental results so far support the capability of potentised homeopathic drugs in bringing favourable response; still, new avenues need to be pondered upon. Collective and concerted efforts can take Homeopathy from tradition to an enriched science.

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