



Demystifying Homeopathy: In the Light of Nano-Science

M. A. Rajalakshmi*

Director, Anjana Homeopathic Care, Bangalore, India

Editorial

One of the fervent topics in recent times has been the active principle or rather the lack of it in homeopathic medicines. The argument being that since homeopathic remedies are highly diluted (beyond Avogadro's number) it is impossible for any molecules of the original substance to be present that can be of therapeutic value. This is because homeopathy defies the conventional physical or biochemical model of science. It challenges the boundaries of physics and chemistry that have been set on established norms. However, there have been research studies on the molecular basis of homeopathy by scientists from fields as diverse as materials sciences, immunology and chemical engineering.

One of the interesting research papers by Rao et al. [1] deals with epitaxy - the transfer of structural information from the surface of one substance (solid) to another substance (liquid) without any physical transfer. The other important aspect discussed is the role of succession (agitating or hitting the solution against a solid object) that causes high pressures and creates nanobubbles that help retain the transferred structural information in the dilution. This paper also details how it was possible to distinguish between two different remedies and also different potencies of the same drug using Raman and Ultra-violet Spectroscopy.

Another essay by Norman Allan [2] in his website quotes the research study conducted by Davenas et al. [3]. This paper sought to show that an antigen diluted in the homeopathic way until there was no molecule of the original substance was still shown to generate an immunological response in certain white blood cells, in this case basophiles. The first part of the essay also mentions a research study conducted by Eweida et al. [4]. He found that a viral assay solution of DNA when serially diluted in water up to the level where the original substance was no longer present was still binding to the complementary DNA strand. This binding was happening at certain points in the dilution (something similar to homeopathic potencies?).

The most notable and highly reported study is the one done by Luc Montagnier the French Virologist and Nobel Prize winner who is credited with the discovery of the AIDS Virus. He published a paper titled 'Electromagnetic signals are produced by aqueous nanostructures derived from bacterial DNA sequences' [5] that demonstrates the possibility of some bacterial DNA sequences being able to induce electromagnetic waves at high aqueous dilutions. Although this research was not intended to prove homeopathy, Dr. Luc Montagnier has since expressed his support for homeopathy based on his findings.

A study by the chemical engineering department of Indian Institute of Technology, Mumbai titled 'Extreme Homeopathic Dilutions Retain Starting Materials: A Nanoparticulate Perspective' [6] has found using electron microscopy, electron diffraction and atomic spectroscopy that certain kind of high potency homeopathic remedies contain nanogram quantities of the original drug substance. At these dilutions according to Avogadro's number there should be no trace of the original drug substance present.

One of the notable studies titled 'Towards understanding molecular mechanisms of action of homeopathic drugs: An overview' by Anisur Rahman Khuda-Bukhsh, Department of Zoology, University

of Kalyani, Kalyani, West Bengal, India has some notable in-vivo and in-vitro experiments that help explain the therapeutic value of homeopathic remedies. He has also published a number of research studies on the effectiveness of homeopathic remedies in treating a number of different disorders [7].

One common thread running through all these experiments was that the results were obtained only when the dilutions were made in the homeopathic way of succession and trituration. Another interesting observation is that most of these studies were undertaken by people who were in no way connected to homeopathy and they did not start out with the intention of proving homeopathy in the first place. It was only when they found the similarities between the research findings and homeopathy that they started to get interested in it.

This is just a bird's eye view and a small sampler of the research conducted in different fields that could one day provide an explanation of the molecular basis of homeopathy. The research studies quoted have been tried to be explained in simple terms and some errors in reporting will hopefully be excused. The details of each study are too vast to be reproduced here.

There needs to be a paradigm shift in thinking to go beyond the physical to the meta-physical to get a true understanding and acceptance of homeopathy in the long run. Most of the research studies that have been conducted are on the structure of water, whereas ethanol is the medium used for preparing homeopathic potencies. Research studies need to be conducted with ethanol as the base.

There have been a number of research studies on the effectiveness of homeopathic remedies in different ailments but it has still not been possible to pinpoint exactly what happens in the system when a homeopathic remedy is administered. Further research that can help show the exact mechanism of action of homeopathic remedies in the organism needs to be undertaken.

Research studies in the area of Quantum electrodynamics and homeopathy may be helpful in demystifying this enigmatic but highly therapeutic system of medicine. Of course to the patient who walks into the homeopathic physician's chamber all that matters is the relief that the little white pills will give for his/her ailment.

Those interested in knowing more about these research studies can go to the links in the references. It is possible due to the facility of Open Access Journals to get hold of a number of different research papers based on the reader's interest which would otherwise have been impossible to access.

*Corresponding author: M. A. Rajalakshmi, Director, Anjana Homeopathic Care, Bangalore, India, E-mail: homeodr.raji@gmail.com

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