Conference presentation

Guest Editorial

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Secretary Giri

The 30th anniversary of the GIRI meetings was celebrated in Amsterdam, - an old city where René Descartes resided 500 years ago, who framed the distinction between ‘matters real’ and ‘matters mental’, a separation that still haunts Western science. Besides, Descartes originated from France where the GIRI was established in 1987 by a group of ‘material scientists’ – so history made full circle...

The mind - matter separation has amongst else resulted in an epistemological obstacle to accept the ‘systemic’ effect of high dilutions. However, it was this GIRI Meeting, too, that shows the polarity is more and more being bridged with empirical data, from the material sciences themselves.

And these data show that the ‘hidden hypothesis’ as Imre Lakatos calls it, - that material changes occur in linear proportion to quantitative stimuli -, may not be always true. The changes in systems occur often in a qualitative sense, that means effect depends on the *context* and the *target* of that action or stimulus.

Several presentations have shown in this meeting (Jerman, Sukul, Tournier) that changing the context of a original substance by treating its aqueous solutions with serial dilution and agitation (SDA), leads to ‘Coherent Domains’ of clusters of water molecules, that are able to absorb and transmit information. And the eventual transfer depends not always on the *quantity*, given the low concentrations, but of the *qualitative* reception of the information encoded in the SDA.

This reception of information by the hydrogen bonds between water molecules (the solvent) may cause different behavior than expected on purely quantitative properties of the solute (the dissolved original substance), if the target of the stimulus is to decode the information in a sensitive system. Catalase enzyme functioning properties form an example of a non-linear sensitivity of a system (Milgrom).

The effect of decoding can be measured both on clinical level and physico-chemical level, using the capacity of a sensitive biological system for receiving the *specificity* of a certain stimulus.

At the physical level, Sukul et al reported that the Raman spectroscopy can detect differences between stretching vibration of hydrogen bonds in aqueous solutions of SDA or ‘dynamised’ preparations from original substances, such as calcium carbonate, natrium chloride and sulphur. This indicates the ‘coherences of domain’ can be empirically translated into measurable and reproducible parameters.

Several studies were made in mineral and plant models.

Zincum metallicum is the topic of a Brazilian-Italian multicentre and long-term project. Several analytic procedures are being tested, different potencies are investigated with the purpose to define composition and impurities of the solutions. This may have important consequences for the standardization of the pharmacopeia (Holandino et al).

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In copper-chloride biocrystallization studies of cress plants, textural image analysis was used (Sokol et al). This method may be used to assess differential effects by specific homeopathic preparations on plants. A systemic review is being undertaken of studies using different models in biocrystallization (Kokornaczyk et al).

A plant model study was on seed and root length of lettuce by stimulating with gibberellic acid, also in SDA form; this did not yield statistical difference (Homsani et al). A possible hormetic effect (inverse effect as opposed to the initial effect of a low dose stimulus) was causing inhibition of seed growth after stimulating *Lippia alba* seedlings with a higher dosis of the same chemical. Because, the dynamised SDA did stimulate seedlings (Silva et al). A similar effect of inversion in terms of cytotoxicity has been observed with SDA forms of *Viscum album*, the basis for Iscador (Blostin). Several remedies stimulated the growth of the fermentation fungus *Saccharomyces cerevisiae* for food production (Aguar Paseti et al)

Other examples of the polarity of effect as a function of high or low concentrations were:

plant growth in salinated soil (a major problem in global agriculture due to fertilizer use) can be stimulated by dynamised salt (natrum muriaticum) while a growth inhibitor as trimethyl ammonium chloride (CCC) in SDA form stimulates rice seedling growth (Mondal).

In an animal model, an SDA form of amfetamine derivative, reduced in mice the experimentally amfetamine-induced anxiety and hyperactivity behavior, which may have implications for the treatment of ADHD and anxiety disorders.

The next step from the laboratory models is to substantiate the clinical claim of curing illnesses by showing the effects of SDA preparations on the target the human immune system. And it is interesting to note the apparent changes that occur in macrophages, key players in immunological changes. The studies from Bonamin, Buchi and Cajueiro show clearly that macrophages are good cellular 'interfaces' for SDA preparations and measurable immunological effects, both on immune cells and micro-organisms such as Leishmaniasis.

The big question marks arise yet at the interaction of immune changes and clinical disappearance of symptoms, and this brings us to the aspect of *system sensitivity*. How can a 'system-far from equilibrium' as an ill patient, emit signals in the form of a symptom pattern that corresponds so well to the sensitized state of the immune system that this can 'receive' the information from the homeopathic remedy (SDA treated) in such a manner that the immune system returns to equilibrium - and the symptoms disappear?

The return to immunological equilibrium was – not coincidentally – during years the research focus in the Montpellier group of professor Madeleine Bastide, the founder of the GIRI. Several experiments with mice have been conducted to assess the effects of SDA forms of cytokines and interleukines on immune-suppressed mice (Bastide, 1995). The immune system of mice is considered to have enough analogy with the human form that these results suggest similar occurrences in human immune systems. The *type of immune change* that may correspond with personal variation in symptomatology – the cornerstone of any homeopathic clinical diagnosis – is now within reach of systems biology, the genomics and proteomics lines.

The contribution from the Verona group (Marzotto et al) focused on the genetic expression of immunomodulatory response. In a previous study (Oliosio et al., 2016), Real time -polymerase chain reaction (RT-PCR) analysis assessed 20 genes coding for immune response. In this study RNA

sequencing investigated the effect of the remedy Arnica on the inflammation process after trauma; this was done through the whole transcriptome coding for protein release and cell motility in a human cell model, the THP-1 cell line that differentiates to macrophages. Up and down regulation of genes was clearly sensitive to arnica 2C that caused non-linear changes in dose–response curves, which reflect the post traumatic effect of this remedy.

Wietmarschen gave an interesting overview of the implications of systems biological for assessing biodiversity in patients, thereby laying a scientific fundament for the individual diagnosis at clinical level in homeopathy.

The main implication is that high-throughput data processing as used in systems biology may disclose the relationship between sensitivity of the immune system and the different clinical patterns that indicate the use of specific remedies. These patterns have been recorded from the reaction of healthy volunteers in ‘remedy experiments’, the clinical empirical base of homeopathic practice.

The choice of remedies however can be limited to set of preferred remedies. A major issue in clinical research is whether individualised treatment is required for diseases with a high prevalence (endemics) or high incidence (epidemics). Studies were done in developing problem oriented algorithms for benign prostate hypertrophy (Sharma), so as to limit the choice of remedies. This will enable application of homeopathy in community health care practitioners with a basic level of training e.g in malaria, globally still the major killer disease (Brands), next to the existing advanced curricula for homeopathic specialists. Homeopathy should be available for as many patients as possible!

So this meeting brought together some key jigsaw pieces that explain the effect of highly diluted solutions in the human ill organism. And I mention ‘ill’ here on purpose, as the sensitivity of an ill person is totally different from that of a healthy person. I hope this inspiring meeting will stimulate even more cooperative projects than already feature the GIRI.

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Reference

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