

CONFERENCE REPORT

Cutting Edge Research in Homeopathy: HRI's second international research conference in Rome

Rome, 3rd–5th June 2015, was the setting for the Homeopathy Research Institute's (HRI) second conference with the theme 'Cutting Edge Research in Homeopathy'. Attended by over 250 delegates from 39 countries, this event provided an intense two and a half day programme of presentations and a forum for the sharing of ideas and the creation of international scientific collaborations. With 35 oral presentations from leaders in the field, the scientific calibre of the programme was high and the content diverse. This report summarises the key themes underpinning the cutting edge data presented by the speakers, including six key-note presentations, covering advancements in both basic and clinical research. Given the clear commitment of the global homeopathic community to high quality research, the resounding success of both Barcelona 2013 and Rome 2015 HRI conferences, and the dedicated support of colleagues, the HRI moves confidently forward towards the next biennial conference.

Keywords: Homeopathy research; Basic research; Laboratory models; Plant models; Clinical trials; Meta-analysis; Conference; Public health challenges; HRI

Introduction

The city of Rome provided a suitably vibrant backdrop for the second international research conference hosted by the Homeopathy Research Institute (HRI), held on 3rd–5th June 2015. This highly successful event followed the same theme as HRI's inaugural conference held two years previously in Barcelona: 'Cutting Edge Research in Homeopathy'. These HRI conferences have provided a unique experience within the worldwide homeopathic conference calendar – a two and a half day international event dedicated solely to homeopathy research, providing a forum for the sharing of ideas and the creation of international scientific collaborations.

The HRI Rome 2015 conference sold out weeks in advance, seeing over 250 delegates come together to hear presentations made by 35 speakers (including 6 professors and 28 doctors (MD/PhD)) from 17 countries. Presentations were selected from 116 abstract submissions to create a programme which included 6 keynote addresses (*Bellavite; von Ammon; Dinelli; Marques de Araujo; Jacobs; Mathie*) and 35 poster presentations. The intense programme was packed with the highest calibre of science delivered by respected and well-established researchers in fundamental, basic and clinical research as well as provings/pathogenetic trials.

The packed house in Rome was a clear demonstration that there is now an established interest in and commitment to, high quality research across all branches of the homeo-

pathic community. The HRI Conference was supported and attended by international representatives from every sector of the profession, including the European Committee for Homeopathy (ECH) and Liga Medicorum Homeopathica Internationalis (LMHI), European Central Council of Homeopaths (ECCH), European Coalition on Homeopathic & Anthroposophic Medicinal Products (ECHAMP) (representing homeopathic manufacturers and pharmacies) and the Central Council for Research in Homeopathy, India (CCRH). In total 39 countries were represented by academics, researchers, homeopaths and individual homeopathic companies, including substantial delegations of students.

The conference also saw a pre-conference workshop on 'Harmonised proving guidelines of ECH & LMHI'; a topic that continued into a parallel session on the second day exploring the practicalities of performing provings, extracting information from provings (*Ross; Smith; Jansen; Renoux*) as well as the challenges and processes involved in gaining ethical approval for provings (*Gray; Duckworth*).

Opening ceremony and keynote address

An inspiring letter from the Italian Minister of Health, The Honourable Beatrice Lorenzin, read by Dr Francesco Marino (vice-president of the Italian Federation of Homeopathic Associations and Homeopaths (FIAMO)) was a

particular highlight of the opening ceremony. L'On. Lorenzin reminded delegates of the importance of the HRI conference, not just as a showcase for homeopathy research, but also as a vital contribution to the fundamental right of every citizen to have “*access to the most effective and appropriate treatments for one's pathology*”.

The conference programme itself was opened by keynote speaker Prof Paolo Bellavite (Italy), a well-established and highly published researcher into laboratory-based models of remedy bioactivity. Prof Bellavite described the existing body of evidence in high dilution research using a range of experimental models (some dating back to the late 19th and early 20th centuries), highlighting both the central importance as well as the challenges posed by basic research: a theme that was to be reiterated throughout the conference. Prof Bellavite then summarised experiments performed by his team investigating the biological effects of potentised *Gelsemium*, using both murine behavioural models to assess its anxiolytic potential¹ and cellular and molecular approaches to explore the possible mode of action. In particular, the striking results of the most recently published microarray gene expression study of the effects of *Gelsemium* on neurocytes cultured *in vitro* were presented.²

A key message from Prof Bellavite's presentation set the scene for the talks scheduled in the coming programme. That is, even though the body of clinical evidence for homeopathy grows in size and strength, its wider acceptance is hindered by arguments of placebo and implausibility. This prompted a timely reminder of the conclusion by Kleijnen *et al.* in their meta-analysis of homeopathy from 1991: “*Based on this evidence we would be ready to accept that homeopathy can be efficacious, if only the mechanism of action were more plausible*”.³ This quote also created an interesting symmetry with Dr Robert Mathie's (UK) closing keynote address on his recent meta-analysis of trials involving individualised homeopathic treatment versus placebo which found homeopathic medicines to have specific beneficial effects (see below).

Homeopathy remains a controversial subject enjoying little acceptance from the wider scientific community, yet its rising popularity with the public continues unabated. While Prof Bellavite showcased the body of evidence currently available in homeopathic basic research, essentially ‘putting an end to the placebo argument’, this left the perennial problem of plausibility unaddressed. It was clear that the two main arms of homeopathy research (clinical and basic) must continue to work synergistically to create a credible position for homeopathy before the profession can gain wider acceptance and ultimately provide potential solutions for some of the main public health issues facing mankind today (Figure 1). The talks and posters presented during the remainder of the conference echoed this synergy.

The opening session concluded with the second keynote address, given by Dr Klaus von Ammon (Switzerland). Dr von Ammon began the clinical presentations by exploring some of the more challenging/unconventional phenomena

seen in practice. Dr von Ammon synthesised these collected experiences and observations into a proposal for a structured programme of research. This proposal reminded delegates that there is still much to explore within homeopathy and the boundaries of the current hypotheses regarding mechanism of action of homeopathic medicines may also need to take additional non-material effects into consideration.

Clinical research

Following on from Dr von Ammon's presentation, a significant number of clinical research presentations explored the effects, or potential role of homeopathy in treating both communicable and non-communicable diseases: communicable diseases included Upper Respiratory Tract Infections (URTIs) (*Jong; Klement*), cough (*Rutten*), otitis media (*Jacobs; Fixsen*) as well as malaria (*Brands*) and Human Immunodeficiency Virus (HIV) (*Shah*) while presentations on non-communicable diseases included adjunctive cancer treatments in adults and children (*Brulé; Rossi; Talarico*), psychiatric disorders (*Viksveen; Tapakis; Blyden-Taylor*), Attention Deficit and Hyperactivity Disorder (ADHD) (*Fibert*), spinal surgery (*Raak*), hypertension (*Chye Phing*) and iatrogenic disorders (*Pareek*).

In a year which saw publication of a negative report on homeopathy by Australia's National Health and Medical Research Council, the closing keynote address of the conference by Dr Robert Mathie (British Homeopathic Association, UK) presented detailed data from his recent systematic review on individualised homeopathic treatment.⁴ Unlike previous meta-analyses, which made little to no distinction between different types of homeopathy, this ground-breaking study looked solely at randomised placebo-controlled trials (RCTs) of individualised homeopathic treatment. For the first time this analysis enabled us to see clearly what the evidence from RCTs tells us about the efficacy of ‘usual care’ as provided by homeopaths in practice; this robust study found that individualised homeopathic medicines are up to twice as likely as placebo to be beneficial, even when results from only the highest quality trials were considered and results were pooled across different clinical conditions.

Basic research

Following from Prof Bellavite's opening address other researchers at the conference presented their work within the field of laboratory-based research. Cellular models of high dilution bioactivity were presented, including the effects of homeopathic *Arnica* on gene expression in human macrophages *in vitro* (*Oliosio*); the cytotoxic and apoptotic effects of *Echinacea* on breast cancer cell lines (*Aguilar Velazquez*); and flow cytometric assessment of *ex vivo* CD4⁺ T cells in response to a range of remedies given to patients with chronic aggressive periodontitis (*Ostermann*).

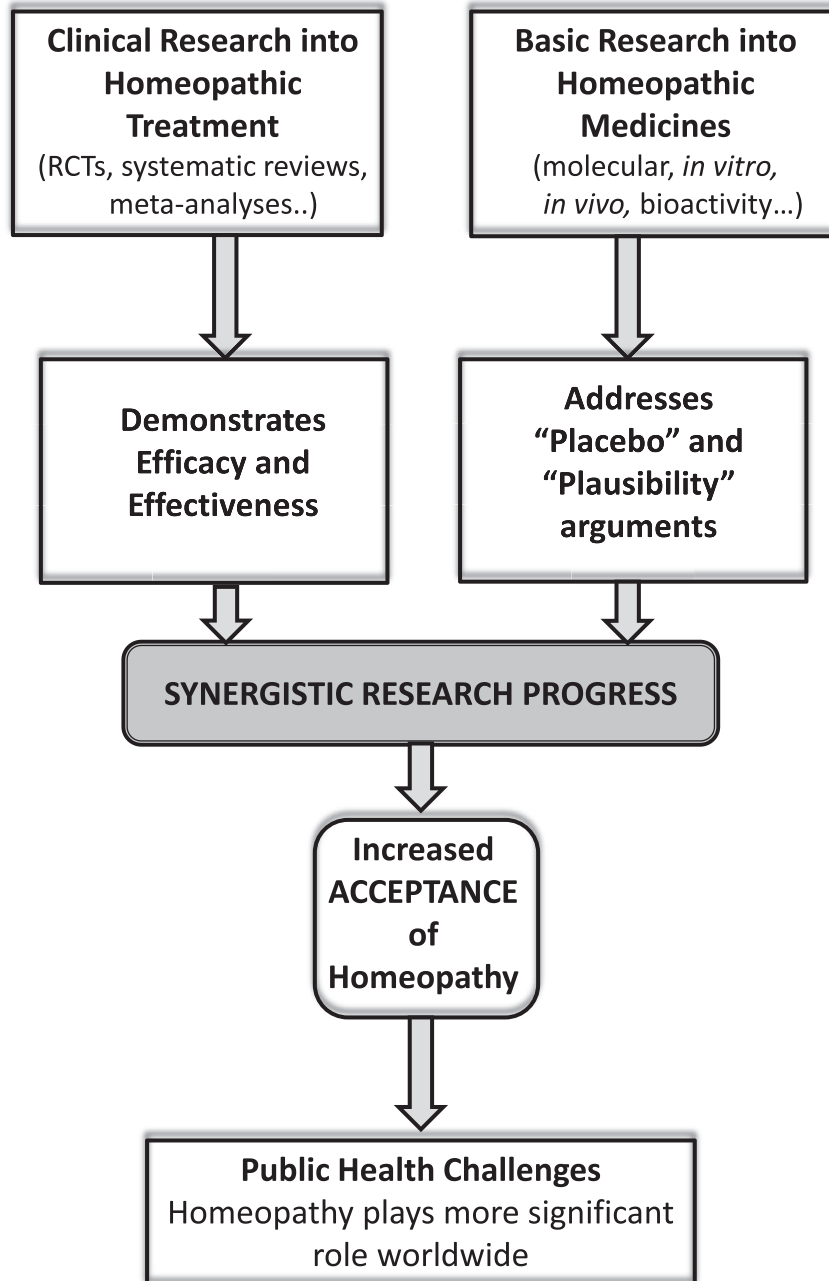


Figure 1 Schematic diagram illustrating the relationship between the two main branches of homeopathy research and Public Health challenges. (Adapted from *Bellavite* presentation). Good quality results from both clinical and basic branches of research into Homeopathy act synergistically to improve the wider acceptance and credibility of Homeopathy as a therapeutic intervention by demonstrating efficacy and effectiveness of treatment at the same time as tackling arguments that homeopathy is 'just placebo' or that it is 'implausible'. Improved levels of acceptance in turn will allow Homeopathy to play a more significant role in supporting global efforts¹¹ to tackle a number of the challenges currently facing Public Health, e.g. multi-morbidity, polypharmacy, adverse drug reactions and antimicrobial resistance.¹⁰

Using whole organism-based models, further basic research approaches were presented including micro-immunotherapy in experimental autoimmune encephalomyelitis (*Camps*); the effects of *Carbo animalis* on the immune response to Ehrlich ascites tumour in mice (*Neves Cordoso*); the effects of *Lycopodium* on reproductive and sexual function in aged male rats (*Lakshmanan*); and the effects of *Zincum metallicum* on lipopolysaccharide-induced inflammatory stress in a perinatal model in mice (*Leite Monteiro da Silva*).

Keynote speaker Prof Marques de Araujo (Brazil), also presented an overview of the body of work generated by

her group on 'biotherapy' treatment of a *Trypanosoma*-infected mouse model of Chagas disease (for example ref 5). Building upon this work, Prof Marques de Araujo then presented new results on the effects of 13dH preparations of *Lycopodium* and *Phosphorus* in *Trypanosoma cruzi*-infected rats showing that homeopathic treatment modified the animals' immune responses with beneficial clinical outcomes, although the remedies did not affect parasitological parameters to a statistically significant level.

Additional whole-organism research using wheat and cress seedling models was presented by Prof Giovanni Dinelli (speaking on behalf of Prof Lucietta Betti, Italy) and

Paul Doesburg (Netherlands), with both speakers covering the newly developed biocrystallisation method of assessing homeopathic effects on biological systems.⁶ Prof Dinelli's keynote presentation also discussed the body of published work from his team looking at the effects of *Arsenicum 45x* on wheat seeds previously 'stressed' by sub-lethal poisoning with arsenic trioxide. In the homeopathic treatment group seed growth was statistically significantly greater than in the control group. Investigating the possible biomolecular mechanisms behind these results, *Arsenicum 45x* was found to have a strong gene modulating effect and restored gene expression to 'healthy' basal levels.⁷

It is clear that there is no shortage of individual studies demonstrating the ability of homeopathic medicines to have an effect upon *in vitro* and *in vivo* experimental models, but achieving precise replication of results is an ongoing challenge. This issue of reproducibility is particularly the case for homeopathy research compared to conventional biomedical research simply because much less is known about which factors perturb the potentised properties of high dilution preparations, making it harder to control or protect against them. To address this issue, Prof Chris Endler (Austria) presented his team's literature review on experiments performed using laboratory based model systems, identifying many interesting and successful replications which may point to the most promising experimental models for use in future investigations.⁸

Exploring fundamental homeopathic research in even finer detail, Dr Steven Cartwright (UK) and Dr Alexander Tournier (France) presented their findings on what might be happening at the molecular and sub-molecular level during dilution and succussion in the potentisation process. Dr Tournier presented preliminary results of a systematic review of publications investigating homeopathy using physico-chemical means, focussing on experiments using Nuclear Magnetic Resonance. In particular he presented evidence that the idea that homeopathic dilutions were due to properties of water alone might be mistaken and that the presence of impurities (such as ionic salts) might be essential for the effects seen experimentally. Similarly, Dr Cartwright, an HRI-funded researcher, shared his recently published findings that solvatochromic dyes react to homeopathic preparations of *Glycerol 50M* in a specific and reproducible manner.⁹ These interesting effects open exciting new avenues of research into the sub-molecular mechanism of potentisation.

Public health challenges

Homeopathy exists as a treatment option alongside conventional medicine and is popular with members of the public, despite its lower level of wider scientific acceptance. As such, it is useful and appropriate to make comparisons between homeopathy and conventional medicine not only in terms of therapeutic approach, but also in terms of the potential benefits and complications each treatment may present for patients. On this theme, Dr Peter Fisher (UK) discussed findings published in *The Lancet* that "*challenge the single-disease framework by which most health care,*

medical research and medical education is configured".¹⁰ He described the 'perfect storm' facing healthcare today: an ageing population with increasing multi-morbidities, resulting in polypharmacy and over-prescribing of antimicrobial agents, leading to increased adverse drug reactions (ADRs), increased costs, even more complex morbidities and resistant micro-organisms. He concluded by drawing attention to the World Health Organisation (WHO) Strategy for Traditional and Complementary Medicine (T&CM) 2014–2023, which calls for a cohesive and integrative approach allowing governments, practitioners and users to access T&CM safely.¹¹

This sobering reminder of the importance of continuing to explore alternative healthcare approaches such as homeopathy was echoed by other presenters at the conference. For example, Dr Rosaria Ferreri (Italy) reported on the success of an innovative care model for patients with chronic disease taking place in the Centre for Integrated Medicine of Pitigliano (Tuscany).¹² This centre, founded in 2011, has since seen 1600 patients with chronic diseases, many with co-morbidities, and offers an integrated treatment approach including homeopathy, acupuncture and Traditional Chinese Medicine. An impressive majority of patients reported that they felt better after treatment across a range of chronic diseases in elderly and young, as well as in- and out-patients. These clinical results were supported by decreased Edmonton symptom scores and a considerable reduction in the use of conventional drugs.

Similarly, Dr Elio Rossi (Italy) presented the results of a cross-sectional descriptive survey that aimed to map provision of integrative oncology treatments across Europe.¹³ Acupuncture and homeopathy were found to be the most widely used Complementary and Alternative Medicine (CAM) therapies in this context, and were mostly used to alleviate adverse reactions to chemo-radiotherapy. Again, this highlights the on-going need to create a network of medical centres involved in offering integrative approaches to complex and chronic conditions so that knowledge, experience and evidence-based progress can be made.

With regards to ADRs, it is important for the homeopathic profession to present data on the safety of homeopathy if it is to be promoted as an alternative or adjunctive treatment for complex chronic cases. The recent decision by the US Food and Drug Administration to review their regulation of homeopathic medicines for the first time in 25 years has put the safety of homeopathy under the spotlight. Rachel Roberts' (UK) re-analysis of the Posadzki *et al.* safety paper¹⁴ and a fresh review of the same literature was therefore well-timed: having identified multiple flaws in the original analysis, only a fraction of the adverse reactions to homeopathic treatment identified by Posadzki's team were verified, demonstrating the high degree of safety of homeopathic medicines and homeopathic treatment. This finding raises the important potential of homeopathy to provide comparatively safe treatments in a rising tide of polypharmacy-related ADRs in conventional treatment of chronic diseases.

Similarly, in a further keynote presentation, Prof Jennifer Jacobs (USA), author of some of the highest quality

clinical trials on homeopathy, presented her randomised controlled trial of homeopathic ear drops in the delayed antibiotic approach (i.e. watchful-waiting) of acute otitis media.¹⁵ This study found that children given homeopathic ear drops in addition to conventional care were significantly less likely to resort to use of antibiotics than the group given conventional care alone. That is, the antibiotic prescription fill rate was reduced by 35%, thus indicating the potential role for homeopathy in supporting international efforts to steward antimicrobials, especially in the paediatric population where otitis media is one of the most common reasons for prescribed antibiotics.

Looking ahead: 2015—2017

By the close of the second HRI conference in Rome it was clear that both the quality and level of interest in homeopathy research is growing, with opportunities being identified for homeopathy to help in dealing with the growing challenges faced in public healthcare, particularly through the WHO's strategy for traditional and complementary medicine.¹¹ But in order for homeopathy to take full advantage of these opportunities (and to increase its wider acceptance), more high quality research is still needed.

The packed house in Rome and the high calibre of the science presented was a clear demonstration that there is now an established commitment to high quality research across the global homeopathic community. Thanks to this ongoing commitment from supporters, patrons and the homeopathic community, HRI is now preparing their 3rd International Homeopathy Research Conference, to be held in late May/early June 2017.

To find out more about HRI or how you can help visit www.HRI-research.org.

References

- 1 Bellavite P, Conforti A, Marzotto M, *et al.* Testing homeopathy in mouse emotional response models: pooled data analysis of two series of studies. *Evid Based Complement Altern Med* 2012; **2012**: 954374.
- 2 Marzotto M, Oliosio D, Brizzi M, *et al.* Extreme sensitivity of gene expression in human SH-SY5Y neurocytes to ultra-low doses of *Gelsemium sempervirens*. *BMC Complement Altern Med* 2014; **14**: 104.
- 3 Kleijnen J, Knipschild P, Ter Riet G. Clinical trials of homeopathy. *BMJ* 1991; **302**: 316–323.
- 4 Mathie RT, Lloyd SM, Legg LA, *et al.* Randomised placebo-controlled trials of individualised homeopathic treatment: systematic review and meta-analysis. *Syst Rev* 2014; **3**: 142.
- 5 Sandri P, Aleixo DL, Sanchez Falkowski GJ, *et al.* *Trypanosoma cruzi*: biotherapy made from trypomastigote modulates the inflammatory response. *Homeopathy* 2015; **104**(1): 48–56.
- 6 Baumgartner S, Doesburg P, Scherr C, Andersen JO. Development of a biocrystallisation assay for examining effects of homeopathic preparations using cress seedlings. *Evid Based Complement Altern Med* 2012; **2012**: 125945.
- 7 Marotti I, Betti L, Bregola V, *et al.* Transcriptome profiling of wheat seedlings following treatment with ultrahigh diluted arsenic trioxide. *Evid Based Complement Altern Med* 2014; **2014**: 851263.
- 8 Endler PC, Bellavite P, Bonamin L, Jager T. Update on repetitions of fundamental research models in ultra high dilutions – a bibliometric study. *Homeopathy* 2015; **104**. in press.
- 9 Cartwright SJ. Solvatochromic dyes detect the presence of homeopathic potencies. *Homeopathy* 2015; **104**. in press.
- 10 Barnett K, Mercer SW, Norbury M, *et al.* Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study. *Lancet* 2012; **380**(9836): 37–43.
- 11 World Health Organisation (WHO): Traditional Medicine Strategy 2014–2023. Available from: www.who.int/medicines/publications/traditional/trm_strategy14_23/en/.
- 12 Bernardini S, Cracolici F, Ferreri R, Rinaldi M, Pulcri R. Integration between orthodox medicine, homeopathy and acupuncture for inpatients: three years' experience in the first hospital for Integrated Medicine in Italy. *J Tradit Complement Med* 2015; **5**(4): 234–240.
- 13 Rossi E, Vita A, Baccetti S, *et al.* Complementary and alternative medicine for cancer patients: results of the EPAAC survey on integrative oncology centres in Europe. *Support Care Cancer* 2015; **23**(6): 1795–1806.
- 14 Posadzki P, Alotaibi A, Ernst E. Adverse effects of homeopathy: a systematic review of published case reports and case series. *Int J Clin Pract* 2012; **66**: 1178–1188.
- 15 Taylor JA, Jacobs J. Homeopathic ear drops as an adjunct in reducing antibiotic usage in children with acute otitis media. *Glob Pediatr Health* 2014; **1**: 1–7.

Alexander L Tournier
E Rachel Roberts*

Homeopathy Research Institute, London, UK

*Correspondence: E Rachel Roberts, Homeopathy
Research Institute, International House, 124 Cromwell
Road, London SW7 4ET, UK.

E-mail: rachelroberts@hri-research.org