HOMEOPATHYRESEARCHINSTITUTE

# Newsletter

*Issue 2, October 2008* *"To facilitate & disseminate high quality homeopathy research."*

**Welcome to the second newsletter of the Homeopathy Research Institute, a newsletter for everyone who wants to understand and support scientific research into homeopathy.**

## Meta-Analyses & systematic reviews of Homeopathy

The results of systematic reviews and meta-analyses of homeopathy have often been reported in the press as being negative. This article briefly describes these two research methods and examines what the systematic reviews and meta-analyses actually tell us.

Meta-analyses and systematic reviews are at the top of the Evidence Based Medicine (EBM) hierarchy, they are the types of evidence given the strongest weight in the medical and scientific press. Conversely, single case studies and anecdotal reports are at the bottom of the EBM hierarchy and are thus seen as the weakest type of evidence.

A systematic review of the literature review focuses on a single question and attempts to identify, appraise, select and synthesize all high quality research evidence relevant to that question. However, when faced with a number of trials, each offering only a small amount of evidence, the results need to be drawn together in a way that will provide an overall result. Meta-analysis is a technique that can be applied to trials (identified in a systematic review) and involves the statistical pooling together of the results of each of the identified trials, thus producing one final overall score of treatment effect for all the trials. However, pooling together trials with widely different purposes, methods and quality presents significant problems for the technique of meta-analysis.

### The power of systematic reviews

Over 150 clinical trials of homeopathy have been published since 1940. In addition, there are 30 published systematic reviews of these homeopathy trials, many of which can be accessed freely via the publicly available NHS National Library for Health Complementary & Alternative Medicine specialist library (www.library.nhs.uk/cam). It is worth pointing out that all the published trials of homeopathy to date are trials of homeopathic remedies; not trials of the treatment provided by a homeopath, nor trials of the principles or therapeutic system of homeopathy. This important distinction is often lost when conclusions are drawn from the findings of systematic reviews of 'homeopathy'.

In trying to understand these systematic reviews of homeopathy trials it is helpful to consider four broad categories according to the types of homeopathy trial reviewed:

- Trials using classical homeopathy prescribing methods
- Trials for specific conditions (e.g. allergies and upper respiratory tract infections), specific remedies (e.g. Arnica) or specific patient groups (e.g. childhood)
- All trials of homeopathy
- Homeopathy trials that use the double blind placebo randomised controlled trial (RCT) design

These systematic reviews are to be distinguished from comparative studies, which compare the efficacy of different types of intervention, the Shang et al 2005 publication (discussed below) is such a study.

**Classical homeopathy**

The two systematic reviews of classical homeopathy trials draw different conclusions from the same evidence. Ernst & Barnes (*Lancet,* 1999) concludes that: "*at present the relative efficacy of homeopathic remedies is not known",* whilst Linde & Melchart's (*JACM,* 1998) findings are that *"the results of the available randomized trials suggest that individualised homeopathy has an effect over placebo".*

**Specific conditions**

Systematic reviews of homeopathy for specific conditions/remedies/patient groups drew a range of conclusions. Five systematic reviews drew positive or encouraging conclusions for the following conditions: post-operative ileus, influenza symptoms, osteoarthritis, pollinosis, and cancer. Eight concluded that there was not enough evidence or contradictory evidence. And two concluded that homeopathy was no better than placebo.

Given the relatively small number of homeopathy trials in each specific condition it is not surprising that the results of the majority of systematic reviews state that 'there is not enough evidence' i.e. there are no trials or no trials of sufficient quality.

## Meta-analyses: the story so far...

To date, five meta-analyses of homeopathy have been published. These studies are referred to as meta-analyses; however they are nothing more than systematic reviews of homeopathy trials, which have also included a statistical meta-analysis of the trial results.

**All trials of homeopathy**

The first meta-analysis published in 1991 by Kleijnen et al. reported on all controlled clinical trials of homeopathy (n=105) and concluded that *"The evidence of clinical trials is positive but not sufficient to draw definitive conclusions because most trials are of low methodological quality and because of the unknown role of publication bias"* (Kleijnen et al., *BMJ,* 1991).

**Homeopathy trials that use the double blind placebo RCT design**

Four meta-analyses of trials of homeopathic remedies that used the double blind placebo trial design drew positive conclusions.

a) In 1996, Boissel et al. reported on 15 high-quality trials and concluded that *"There is evidence that homeopathic medicine is more effective than placebo".* (Boissel et al., *Rep Eur Comm,* 1996).

b) Linde's meta-analysis reported on the results of 89 trials which were considered to be of sufficient methodological quality (Linde et al., *Lancet*, 1997). After a thorough statistical analysis they concluded, *"The results of our meta-analysis are not compatible with the hypothesis that the clinical effects of homeopathy are completely due to placebo".* This paper generated a heated debate in the scientific literature.

c) Linde and Melchart (1998) in their systematic review of classical homeopathy also performed a meta-analysis of the results. They concentrated on 32 trials of classical homeopathy and concluded, as stated previously, in favour of an effect of homeopathy.

d) Cucherat's meta-analysis concluded that: *"there is some evidence that homeopathic treatments are more effective than placebo; however, the strength of this evidence is low because of the low methodological quality of the trials*" (Cucherat, *Eur J Clin Pharmacol*, 2000)

Of these five meta-analyses, three were included in the NHS Database of Abstracts of Reviews of Effects (DARE) held by the highly respected Cochrane Library (Linde et al. 1997, Linde & Melchart 1998 and Cucherat 2000). All five meta-analyses concluded in favour of homeopathy. Generally reviews have highlighted the weakness of the evidence and hence the need for more high-quality trials – a common finding of reviews and meta-analyses in conventional medicine.

### The Shang et al. 2005 study

The first comparison of trials of homeopathy with trials of conventional treatments was published by Shang et al. (*Lancet*, 2005). This comparative meta-analysis set out to compare the results of 110 trials of homeopathy matched with 110 allopathic trials of similar size. Their findings – were widely reported in the press at the time as heralding "the end of homeopathy". They concluded, "*This finding is compatible with the notion that the clinical effects of homoeopathy are placebo effects*".

However, there are serious questions regarding the methods used, as a) the study did not follow the Quality of Reporting of Meta-Analyses (QUOROM) guidelines (*Lancet*, 1999), b) the criteria by which the high-quality trials were selected were not stated up front, and c) most reanalyses of the highest quality trials produce results favourable to homeopathy (Lüdtke & Rutten, *J Clin Epidem,* 2008). Thus there are concerns that the trials were selected in such a way as to obtain the desired negative result. The study has not been included in the high quality Cochrane Library's Database of Abstract of Reviews of Effects (DARE). This study has done very little to clarify the issues with homeopathy and it is left to future studies to steer away from the serious limitations of this study and analyse the data afresh.

### Conclusion

There are over 150 clinical trials of homeopathic remedies published since 1940 covering a very broad range of conditions, and 30+ published systematic reviews which have asked a wide range of questions of these trials. Despite there being 'insufficient evidence' of their efficacy for many specific conditions, the four meta-analyses of placebo controlled trials all conclude that homeopathic remedies have an effect that is greater than placebo. Clearly, a lot more high-quality research is required in order to consolidate these findings.

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### Update from the HRI

The HRI team has been busying themselves in recent months behind the scenes. Here are just some of the things we have been doing, along with adding key personnel to our team.

**Website:**

A new website is in preparation, new features are being added. It will be re-launched before the end of the year.

**Projects**:

Funding is still being sought, but we have started to receive donations from friends of the HRI, which allows us to get started on the **Database Project** - an online resource for scientific papers on homeopathy research.

### The HRI needs your support

HRI is currently seeking funding and support from those with an interest in homeopathy research. If you want to subscribe to this newsletter or make a donation to the HRI, please go to our website.

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