DEBATE

Homoeopathy: Discussion on scientific validation

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ABSTRACT

Background: There are diverging opinions about scientific evidence for Homoeopathy, but evidence for conventional medicine is not perfect either. In fact, proof for Homoeopathy is not inferior to conventional. However, the evidence for Homoeopathy has been downplayed by selection of trials (cherry-picking). The effect of Homoeopathy in randomized controlled trials (RCTs), however, is small due to many ineffective prescriptions. This is caused by shortcomings of our Materia Medica and Repertories.

Discussion: The hegemony of the RCT is increasingly questioned; it does not provide all answers, especially not for the individual patient. The individual patient wants to know his individual prognosis: Will this medicine work for him? This is even more important than his individual diagnosis. It is possible to assess prognosis scientifically the same way as diagnosis. Prognostic research is based on daily practice; practitioners should have knowledge about statistics to fulfill their role in this process.

Conclusion: The discussion in this paper elucidates that RCT has its limitations, especially for the patient whose main concern is recovery/prognosis. Drug validation is a key to improve the outcome of clinical practice in Homoeopathy.

Keywords: Drug validation, Evidence-based medicine, Homoeopathy, Prognosis research, Randomized controlled trials

INTRODUCTION

Scientists state that complementary and alternative medicine (CAM), including Homoeopathy, can only be recognized after validation based on randomized controlled trials (RCTs) because conventional medicine practice is based on outcomes of RCTs. Some people seem convinced that there is a lack of scientific proof in respect of Homoeopathy; others state that proof for Homoeopathy is not inferior to conventional medicine. Several meta-analyses conclude that Homoeopathy is not a placebo-response.¹,² After 2004, the opinion about Homoeopathy in conventional medical journals is predominantly negative. This is not caused by different results in later RCTs, but by selection of trials as we will show in this article. The different opinions about efficacy of Homoeopathy demonstrate subjective and selective interpretation. The so-called scientific proof for most conventional medical interventions can also be questioned.³ Hence, how
should we proceed with science? First, it would help if homoeopathic practitioners understood the essentials of research, statistics, and how they can contribute in removing unreliable symptoms from our traditional textbooks and by adding most reliable symptoms/syndromes and their relations with modern diagnosis. What does RCT evidence tell and what not? Can and should we improve the effect of Homoeopathy and how?

An interesting aspect of Homoeopathy is that the prescription is “personalized:” It fits the patient, not only the diagnosis. As personalized medicine is the essence of Homoeopathy and a trending topic in medical research, we should focus more on “personalized” research, on validating the symptoms that indicate homoeopathic medicines. This is also an answer to the main problem of RCT evidence: It is not personalized.

**PLAUSIBILITY**

Understanding how the human organism works, based on underlying science such as chemistry and physics, is of great importance for medicine. It leads the way in finding cures and diagnosing illness. However, it also leads to a paradigm (something that is not questioned) in research; progress in medicine is expected by small step increments in existing knowledge. Homoeopathy is perceived as not clearly connected to existing knowledge of chemistry and physics, but the disconnectedness with existing knowledge is often exaggerated by posing the medicine-receptor-interaction as the only possible model of action for medicines. It is often stated that “Homoeopathy cannot work,” but this should be “Homoeopathy cannot work as conventional medicines.” The medicine-receptor model seems attractive in its simplicity and leads to notions such as dose-effect relationship; if your dosage is higher, the medicine works better. The limitation of this model is already demonstrated by developments in conventional medicine such as vaccinations, hormesis, and nanomedicines. Plausibility appears insufficient in personalized medicine.

Plausibility also has its limitations, especially in living organisms. We understand how antibiotics work, but at times they are of limited use in frequently occurring infections, such as otitis media; in fact, can increase recurrence. Patients often experience no relief from conventional medicines in many diseases. Ineffective conventional medicines can even harm and excess usage of antibiotics leads to antimicrobial resistance. Therapies can be plausible and still have no effect in daily practice. This can only be discovered by epidemiological evidence, by measuring the occurrence of things.

How do we know that medicines can cause harm? Because of single cases, if adverse effects are obvious. Further, by applying observational research, counting cases showing that adverse events occur more frequently in users of conventional medicine. In statistical terms, the prevalence is higher. Individual observations, especially when brought together, are not useless as many people think. However, how can we be sure that a medicine works, that it is not just spontaneous recovery, or the reassuring words of the doctor? The best way to discover this is by experimental research comparing groups, but with limitations, we will discuss later.

Hence, medical science cannot rely on plausibility and RCT only. The causal relationship between cure and medicine can also be assessed in a single case if the effect is obvious, the same as in adverse effects. Observational research detects things that RCT cannot detect.

**STATISTICS**

The gold standard in epidemiological evidence is the RCT. The statement that conventional medicine is scientific and CAM is not can only be confirmed or dismissed by analysis (review) of existing RCT evidence. Such an analysis has been performed on request of the Government of the USA and the outcome – based on data of the highest authority – was surprising [Table 1].[5] Conventional medicine is much less effective than expected; only 41.3% of all conventional trials show (possible) efficacy. More surprising still is that the efficacy of CAM is not much less: 38.4%. On the other hand,
conventional medicine is much more harmful than CAM; 8.1% of conventional medicine proved harmful against 0.69% of CAM.

**VARIATION**

Why is knowledge based on casuistry so disputed? Every doctor should understand variation to understand why his experience can be different when compared with colleagues. Data become more reliable if we have many observations. Variation plays an important role in medicine and especially in Homoeopathy. Some homoeopathic doctors think that the medicine *Stramonium* cannot be prescribed if the patient has no fear of the dark. However, an assessment of best cases by a group of doctors in the Netherlands showed that only five out of 12 (42%) *Stramonium* cases had fear of the dark.[6] These cases had a follow-up longer than 1 year, and all participating doctors agreed that *Stramonium* worked in these cases because there was no other explanation for the effect and the medicine had to be repeated several times because of returning complaints. Doctors who refuse to prescribe *Stramonium* if fear of dark is absent will fulfill their own prophecy; this is called confirmation bias. Another example is the symptom, “fear of death.” In the best-case assessment of the medicine *Sulphur* in the Netherlands, 15 doctors presented 23 *Sulphur* cases. One doctor had two cases and one of these two had fear of death. For this doctor, fear of death was linked to *Sulphur* because 50% of his cases had this symptom. The other 14 doctors had no *Sulphur* patients with fear of death. For these doctors, fear of death was not related to *Sulphur*. Now imagine, what will happen if all 15 doctors are teachers in Homoeopathy. One doctor will teach something else about *Sulphur* than the other teachers. This is how many vigorous disputes between homoeopaths arise.

There are many other examples of the influence of variation on our observations. Small numbers of observations lead to unreliable conclusions. Because of the large variety of medicines we prescribe and the limitations of our short-term memory, it is difficult for one doctor to reproduce from memory, say, five cases of one specific medicine, let alone remember if a specific symptom was present or not. Still, much of what we know about homoeopathic Materia Medica is based on such knowledge. Casuistry still has great value for medicine, but the causal relationship between therapy and effect is uncertain. We know that the doctor has a healing effect, the so-called placebo effect. This is why we need randomized trials, but standardization of case-descriptions and collecting large numbers of similar cases of different doctors will reduce statistical uncertainty.

**RANDOMIZED TRIALS**

We learn from individual cases, but individual cases will not convince others. It is hard to prove that cure is really due to the prescribed medicine; spontaneous recovery is possible, or other factors such as the placebo effect may have caused the cure. To prove that a medicine really works, we need experimental research to differentiate between two groups that are similar, except for the medicine. One group receives the supposedly active medicine; the other receives something that looks and tastes the same, but without the active ingredient. Neither doctor nor patient knows who receives the real medicine (*Verum*) and who receives the placebo. This is called an RCT.

Suppose we want to test a medicine that does not work in, say, 110 RCTs. What outcome can we expect because of statistical variation? In the first place, the number of trials that show an effect to the *Verum* and the placebo will be the same. The effect can be small or strong and a few trials will show a strong effect. This situation is graphically shown in Figure 1. In this hypothetical situation, only three trials show the strongest effect on the “*Verum*” (that actually does not work) and three a strong effect on placebo.

![Figure 1: Hypothetical distribution of 110 randomized controlled trials of therapy that has the same effect as placebo. The number of randomized controlled trials that favor “*Verum*” is the same as the number that favors “placebo.”](http://www.ijrh.org)
In medical research, we use *P* values and confidence intervals to express how likely a result is, comparable to the likelihood that flipping a coin a thousand times renders, say, 400 times heads. By convention, we use the 95% confidence interval, equal to *P* = 0.05, indicating that 5% of findings may strongly differ from the expected value. The other findings are “statistically nonsignificant.” Figure 1 represents a typical not effective therapy; in this case, we see the same amount of “statistically nonsignificant positive” and “statistically nonsignificant negative” results.

The reason that we used 110 trials in our hypothetical example is that there actually is a comparison between 110 Homoeopathy RCTs and 110 conventional RCTs. This comparative review was performed by Shang under the supervision of Prof. Egger, a declared opponent of Homoeopathy. The outcome of this review is shown in Table 2, compared with the expected outcome if Homoeopathy were a placebo effect.

Table 2 shows that there is a strong difference between the expected placebo-outcome and the real outcome, both for Homoeopathy and for conventional medicine. We see that conventional medicine has more statistically significant positive results, but actually, the purpose of Shang/Egger was to show that the quality of Homoeopathy trials was worse than of conventional trials. It is known that low-quality trials show exaggerated effects. Surprisingly, the quality of Homoeopathy trials was better: 21 (19%) good quality trials for Homoeopathy against 9 (8%) for conventional medicine. Based on this comparative analysis, we can state that the evidence in Homoeopathy is not inferior to conventional medicine.

This outcome is contested by Shang/Egger and others by “cherry-picking.” Selection of cases on subjective criteria. Shang/Egger selected two undisclosed subgroups of eight Homoeopathy trials and six conventional trials. Although not disclosing of essential information is against publishing guidelines, the authors refused to give this information during 4 months after publication. When the information was finally delivered, it appeared that the subgroups were incomparable. Another example of cherry-picking is a report by the Australian National Health and Medical Research Council (NHRMC).

While Shang/Egger concluded in 2005 that there was a “substantial beneficial effect” without evidence of bias for Homoeopathy in upper respiratory tract infections (URTI) based on eight trials, the NHRMC concluded in 2014 that “Homoeopathy is not more effective than placebo for the treatment of people with URTI”. In 2014, there were about twenty randomized trials on URTI and the NHRMC selected three of them on disputable criteria.

Despite other opinions, we may conclude that evidence for Homoeopathy is not inferior to conventional evidence. On the other hand, the effect size of Homoeopathy is smaller than of conventional medicine; Homoeopathy has more statistically nonsignificant results. This is consistent with a recent meta-analysis by Mathie et al. of individualized Homoeopathy; the pooled effect of all trials is statistically significant but small.

### WHY HAS HOMOEOPATHY A SMALL EFFECT?

Every homoeopathic practitioner has spectacular cases, but most cases are less spectacular. It is often not easy or even impossible to find the homoeopathic medicine that does work. Sometimes, we conclude by hindsight that the medicines prescribed did not fit the patient despite well-documented choices of these medicines. If we look critically at our knowledge, our Materia Medica, and Repertories, we must acknowledge that there are a number of weaknesses as follows:

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**Table 2: The expected outcome for 110 randomized controlled trials of a placebo therapy, and the actual results of a comparative review of Homoeopathy and conventional medicine by Shang/Egger (Lancet 2005)**

<table>
<thead>
<tr>
<th></th>
<th>Statistically significant positive</th>
<th>Not-significantly positive</th>
<th>Not-significantly negative</th>
<th>Statistically significant negative</th>
<th>Total</th>
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<tbody>
<tr>
<td><strong>Expected for placebo</strong></td>
<td>3</td>
<td>47</td>
<td>47</td>
<td>3</td>
<td>110</td>
</tr>
<tr>
<td><strong>Homoeopathy</strong></td>
<td>50</td>
<td>41</td>
<td>17</td>
<td>2</td>
<td>110</td>
</tr>
<tr>
<td><strong>Conventional medicine</strong></td>
<td>66</td>
<td>26</td>
<td>15</td>
<td>3</td>
<td>110</td>
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</tbody>
</table>

[Last accessed on 2016 Jan 16]
• The source of much knowledge is unknown
• Many entries in our repertories are based on one or few cases
• Few cases are adequately described, making it impossible to assess the causal relationship between medicine and cure
• Statistical variation is hitherto virtually not considered in homoeopathic cases.

The insufficient handling of statistical variation in casuistry causes a systematic mistake in our repertories. In the paragraph about variation, we demonstrated some examples; the medicine Sulphur is in the repertory-rubric only because this medicine is so often prescribed that eventually a patient cured by Sulphur with fear of death will turn up. Many repertory-rubrics cannot be trusted completely; they even render false information leading to misclassification of the patient and failure to cure. Every failure will decrease the total effect of Homoeopathy for a specific condition. There is an extra problem in RCTs that the wrong homoeopathic prescription is a perfect placebo because Homoeopathy has no adverse effects. In conventional RCTs, there is no perfect placebo because the patient will notice that he has received the real medicine because of adverse effects, even if the medicine has no beneficial effects.

It is clear that we have to improve Homoeopathy to get better effects in RCTs. Especially the handling of variation requires the application of scientific methods. These methods should suit the homoeopathic method.

PERSONALIZED MEDICINE

 Probably far more than half of all patients are ill-informed by the information in RCT evidence not only because the outcome is not valid for them but also because the evidence can be biased. There is a strange discrepancy in the medical consultation that we start with anamnesis and physical examination, possibly followed by additional tests. This process renders some symptoms and test results that enable us to estimate the probability of several diagnoses. The next step is totally different; we prescribe a medicine and the only thing we know about this medicine is that provided the diagnosis is right, it works better than placebo in the average patient who is eligible for RCT research (less than half of our patients). However, the patient in front of us is not an average patient; he can be too old or too young or for other reasons not representative for RCT evidence and we did not consider prescribing placebo. We can answer the question, “what is wrong with me?” with some certainty, but the question “will this medicine work for me?” cannot be answered. Diagnosis is personalized, therapy is not.

Is the first step (diagnosis) useful and unscientific and the second (therapy) useless and scientific? That would mean a scientific action based on unscientific criteria, crudely said that “garbage in–garbage out” process. The first step (diagnosis), however, is not unscientific because of consensus and is eligible for scientific improvement by diagnosis research.

Consensus
Doctors are able to establish the right diagnosis throughout history because they learn from their own experience and of the colleagues. They know how to diagnose appendicitis and what to do about it. Appendicitis has specific symptoms that appear more frequently in this disease than in other diseases. Throughout history, doctors reach agreement on such symptoms and the necessary therapy.

Diagnosis Research
It started later. Diagnostic machines such as ultrasonography (US) appeared to be useful in diagnosing appendicitis. The procedure to assess this is straightforward; you do US on a large number of patients and compare the outcome of the test with a reference, as the result of histopathology on the surgically removed appendix. The population of patients with a histologically confirmed appendicitis is called the “appendicitis population;” all the other patients where US has been performed are the “remainder of the population.” After this procedure, we have four populations [Table 3]:
• Patients with positive US and confirmed appendicitis
• Patients with positive US but no confirmed appendicitis

<table>
<thead>
<tr>
<th>Table 3: 2×2 Table after assessment of a diagnostic test</th>
</tr>
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<tbody>
<tr>
<td><strong>Appendicitis population</strong></td>
</tr>
<tr>
<td>US positive</td>
</tr>
<tr>
<td>US negative</td>
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<td>a + c</td>
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</table>

US: Ultrasonography
• Patients with negative US but with confirmed appendicitis
• Patients with negative US and no confirmed appendicitis.

The perfect test renders no patients with appendicitis despite negative US (false negatives) and no patients without appendicitis despite positive US (false positives). This is rarely the case because very few tests are perfect. Self-evidently, tests with less-false positives and less-false negatives are better. If a test is not perfect, we are not certain of the disease; if the test is positive, but the probability of the diagnosis increases, more so if the test is better.

Symptoms are not basically different from diagnostic tests by machines; a symptom increases the probability of a specific diagnosis. Doctors know that they often need more than one symptom or test to become more certain about a specific diagnosis: It is build-up step-by-step. We can assess symptoms the same way we assess US.

Assessing tests and symptoms is a scientific procedure and is different from RCT that is about testing a hypothesis as “this medicine is a placebo.” After this test, we can be quite (95%) certain that the medicine is not a placebo, but the relevance for the patient is questioned above. Diagnosis research does not test a hypothesis; it merely assesses the quality of a diagnostic test or symptom. After this research, we know that positive US increases the probability of appendicitis, say, from 30% to 70%, after we already suspected appendicitis based on clinical symptoms. Such clinical symptoms and signs might be motion pain in the lower right abdomen and rebound tenderness. Diagnosis research gives us probability not certainty. This is generally regarded less scientific, but it is certainly more relevant for the individual patient.

FROM DIAGNOSIS TO PROGNOSIS

Why would assessment of medicines the way we assess diagnosis be impossible, or even be less desirable? In Homoeopathy, in fact, we already do this for two centuries. We speak of “homoeopathic diagnosis,” meaning a fair chance that a specific homoeopathic medicine will work. In the modern terminology, we would prefer “homoeopathic prognosis” instead of “homoeopathic diagnosis.” The process of forming a homoeopathic prognosis is very much the same as forming a conventional diagnosis. The probability that a specific medicine will work increases step-by-step as more indicative symptoms are present in the patient in front of us. We hypothetically compare forming of the diagnosis pneumonia with the forming of the prognosis that the homoeopathic medicine Bryonia will work [Table 4]. The probability of pneumonia is still low if the patient only has fever. If he also has a cough, the probability of pneumonia increases, more so if he also has rapid breathing and dyspnea. Then, we estimate the probability to be, say, about 50%. To be surer, we listen to the lungs and we test blood for C-reactive protein. Likewise, the chance that Bryonia will work if we only know that the patient has a cough is low, say 5%. We need to observe the patient and explore further symptoms to become more-and-more sure that Bryonia will work. With the symptoms such as “cough, worse entering a warm room,” “holding his chest while coughing,” “thirst for large quantities,” “desire for cold drinks,” and “cough, worse if the weather changes from cold to warm,” we are pretty sure, say 70%, that Bryonia will work.

The diagnostic and prognostic processes represent expert’s expectations of chances of the diagnosis or prognosis [Table 4]. Different practitioners may have different estimates; this is just to give an idea how such processes work.

Homoeopathic symptoms can be assessed just as US and illness symptoms. The same procedure is followed: Check the symptom in a large number of patients, evaluate results, and then count the number of patients with and without the symptom in the whole population and in the populations responding well to specific medicines. Some retrospective and prospective assessments of homoeopathic symptoms as prognostic factors have already been performed,[13-16] and the Central Council

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Chance (%)</th>
<th>Prognosis</th>
<th>Chance (%)</th>
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<tbody>
<tr>
<td>Pneumonia</td>
<td></td>
<td>Bryonia</td>
<td></td>
</tr>
<tr>
<td>Fever</td>
<td>5</td>
<td>Cough</td>
<td>5</td>
</tr>
<tr>
<td>Cough</td>
<td>10</td>
<td>&lt;entering warm room</td>
<td>20</td>
</tr>
<tr>
<td>Rapid breathing</td>
<td>30</td>
<td>Hold chest while coughing</td>
<td>40</td>
</tr>
<tr>
<td>Dyspnea</td>
<td>50</td>
<td>Thirst large quantities</td>
<td>50</td>
</tr>
<tr>
<td>Auscultation</td>
<td>70</td>
<td>Desire cold drinks</td>
<td>60</td>
</tr>
<tr>
<td>CRP+</td>
<td>80</td>
<td>Change from cold to warm</td>
<td>70</td>
</tr>
</tbody>
</table>

The probability increases after each added symptom or test. CRP: C-reactive protein
for Research in Homoeopathy has adopted this kind of research for its drug validation program.

CAUSAL RELATIONSHIP

In the case of US testing for appendicitis, we have a reliable test to establish the presence of appendicitis: Histopathology of the removed appendix. Such a test is called the reference test or gold standard: The assessed test (US) is compared with the reference that is considered the best way to identify the illness or outcome. In many cases, the reference test is less reliable, especially in prognosis research. The reference here is the outcome of treatment, but how can we be sure that the assessed therapy caused the cure? On the other hand, we learn from cases, some are more convincing with respect to a therapy than others. A case of flu improving in 10 days is not convincing, but improvement of wellbeing and dyspnoea after a few minutes in pneumonia is convincing. There are many indications for a curative effect in single cases, but they should be mentioned in the case report.

Single cases and observational studies assessing daily practice deserve a more important role in medical science. To fulfill this role, we need standardization of case reports. The CASE guidelines are recently adapted for Homoeopathy as the HOM-CASE supplement to the CARE guidelines.[17]

DISCUSSION

The discussion about the evidence for Homoeopathy demonstrates the weaknesses of scientific discussions in medicine, especially of plausibility and RCT evidence. In this respect, patients and scientists have different interests. The patient readily accepts implausible methods if plausible methods fail because it is in his interest. The present identification of evidence-based medicine (EBM) with RCT is obsolete because it neglects the individual patient. Greenhalgh et al. stated in 2014 that “real EBM has the care of individual patients as its top priority”. [18] Homoeopathy is personalized medicine for two centuries.

Jenicek and Hitchcock, in their book published by the American Medical Association, advocate critical appraisal of CAM, not denial, also considering outcomes of interest for the patient.[19] Conventional medicine may learn from the outcome of Homoeopathy research. Such outcomes of interest may be the results in case of multi-morbidity, long-term results, but also prognostic factors. This is what patients appreciate in Homoeopathy and RCT is not the optimal tool to measure this. Prognostic factors (symptoms) are of direct importance for the individual patient and as diagnostic factors, they can be scientifically assessed. Possibly observational research interests can have more scientific validity than compromised RCT.

At present, there are about 200 RCTs in Homoeopathy and the result is “as good as it gets.” We should acknowledge that the mean effect of Homoeopathy is small; impressive cases are counter-balanced by cases where the right homoeopathic medicine could not be found. This is partly due to severe and systematic shortcomings of our repertories, mainly because variation has been neglected so far. The systematic mistake of neglecting variation can be resolved by scientific assessment of cases, case series as well as single cases. Good description of cases is the responsibility of every homoeopathic practitioner. The main prerequisite of each case description is can causality be assessed?

Homoeopathic practitioners should have enough knowledge about intricacies of homoeopathic research to search for their own scientific identity. Homoeopathy can offer new dimensions to EBM because it is a data-driven method and personalized medicine. The data consist of a vast amount of cases. For scientific evaluation by qualitative and quantitative research, these cases must be formatted following the HOM-CASE CARE guidelines. The validation of homoeopathic symptoms requires the cooperation of a large number of practitioners.

CONCLUSION

The evidence for Homoeopathy is not inferior to conventional evidence. The mean effect of Homoeopathy, however, is small due to cases where the correct medicine cannot be found. This is partly caused by unreliable entries in our materia medica and repertories and by neglecting statistical variation.

Homoeopathy has been personalized medicine for two centuries. The recent demand for personalized research beside RCT is an excellent opportunity to favor other methods of EBM to improve the knowledge in homoeopathic Materia Medica and Repertories. We can compare the homoeopathic
prognostic process with the conventional diagnostic process and use research methods that are common in diagnosis research.

Homoeopathic doctors must be involved in validating homoeopathic Materia Medica because their cases are the basic material. This is possible if they are familiar with basic principles of science and statistics. They must realize that their practice experience has scientific value if assessed properly. This can form the basis of drug validation and evidence so generated across the globe by multiple prescriber can be stronger and more meaningful than present RCTs.

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Conflicts of Interest
There are no conflicts of interest.

REFERENCES

Homeopatía: Discusión sobre la validación científica

RESUMEN

Hay opiniones divergentes sobre las evidencias científicas de la homeopatía, aunque las evidencias de la medicina convencional tampoco son perfectas. De hecho, las demostraciones de la homeopatía no son inferiores a las de la medicina convencional. Sin embargo, a las evidencias en homeopatía se les ha restado importancia seleccionando los ensayos (mediante lo que se llama el “cherry picking” [selección particular]). No obstante, el efecto de la homeopatía en los ECA es reducido debido a muchas prescripciones ineficaces. Esto se debe a las deficiencias en nuestra materia médica y los repertorios.

La hegemonía de los Ensayos Controlados Aleatorizados (ECA) se está cuestionando cada vez más; no aportan todas las respuestas, en especial, en lo que se refiere al paciente individual. El paciente individual quiere saber cuál es su pronóstico personal: ¿este medicamento le será útil? Esto es incluso más importante que su diagnóstico individual. Científicamente es posible evaluar el pronóstico de la misma manera como se hace con el diagnóstico. La investigación pronóstica se basa en la práctica clínica cotidiana; los médicos deben tener nociones de estadística para cumplir su función en este proceso.

La discusión en este artículo evidencia que los ECA tienen sus limitaciones, en especial, en los pacientes cuya preocupación principal reside en la recuperación / pronóstico. La validación de los medicamentos es clave para mejorar la práctica clínica de la homeopatía.