many indications point towards the idea that nanoparticles of some type are involved in homeopathic dilutions. These ideas need to be verified experimentally, confirming or infirming the different hypotheses, furthering and bringing needed clarity to this crucial field of research.

Economic evaluations of homeopathy: a review

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Context: Economic evaluations of homeopathy are needed as part of the overall evidence-base of homeopathy. Such evaluations are of importance for patients, practitioners, policy makers and other stakeholders. Only limited evidence has been provided in previous reviews. There is a need to assess current research evidence of economic evaluations of homeopathy and to discuss recommendations for future research.

Objectives: To review and assess existing economic evaluations of homeopathy.

Methods: A review based on articles retrieved through databases and other sources. Databases used: AMED, Cochrane LIBRARY, CRD (DARE, NHS EED, HTA), EMBASE, MEDLINE. Other sources: *Homeopathy* (the journal), reference lists and contact with other authors.

Results: Sixteen economic evaluations of homeopathy fulfilling the inclusion criteria were identified. Studies included a total of 3.700 patients who received homeopathic treatment. Ten studies reported on control group participants. Ten out of 16 studies identified cost savings and health improvements. Four studies found improvements comparable to control group participants, at similar costs; and two studies at higher costs. Studies were highly heterogeneous and had several methodological weaknesses.

Conclusions: The overall evidence suggested cost savings and potential benefits of homeopathy. Studies did however have several methodological weaknesses and were highly heterogeneous, limiting the possibility to draw firm conclusions. We present recommendations for future research.

Homeopathic medication in pulmonary tuberculosis treatment, clinical evolution, and drug-resistance: a randomized, double blind clinical Trial

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Tuberculosis (TB) is a serious worldwide public health problem, with high rates of incidence, prevalence, and mortality. Nearly one third of the world population is infected with Mycobacterium tuberculosis. TB prevention and treatment represent a considerable financial burden for society. Up to 2015 US$ 8 billion per year will be needed in the most affected countries. Until the present day there is no effective vaccine to prevent TB in adults. Multi-drug resistance in TB treatment (MDR-TB) is increasing worldwide. Globally, 3.7% of new cases were estimated to have MDR-TB, as well as 20% of previously treated cases. Besides, the average proportion of MDR-TB cases with extremely drug-resistant tuberculosis (XDR-TB) is 9.0%. A significant effort is being addressed to develop both new drugs to treat drug-sensitive or drug-resistant TB, and eleven vaccines to prevent TB. Globally, the treatment success rate among all newly-diagnosed cases has been 85%, and 87% among patients with smear-positive pulmonary TB (the most infectious cases). This figure reveals a rate of about 15% unsuccessful treated cases, which poses an impact on population treatment time, cost, efficacy, and safety. Regimen for most patients with MDR-TB takes 20 months. Cost of drugs alone for treating the average MDR-TB patient is 50 to 200 times higher than for treating a drug-susceptible TB patient. Besides, second-line anti-TB drugs can have serious side-effects, while being less potent. In a broader perspective of the disease progress, these consequences are major causes for treatment abandonment, a factor that contributes to increasing the number of new infected patients. The objective of this study is to evaluate the influence of the homeopathic medicine Tuberculinum bovinum in patients treated for pulmonary tuberculosis, with first-line anti-TB drugs RHZE (isoniazid, rifampicin, pyrazinamide, and ethambutol). A prospective, randomized, placebo-controlled, double blind trial is being conducted with 50 adult patients at the tuberculosis control unit of the Hospital Federal dos Servidores do Estado (Federal Hospital of State Workers), in the city of Rio de Janeiro. All patients met the following criteria for entry into the trial: male or female, sputum smear-positive pulmonary tuberculosis, beginning of anti-TB treatment. Patients diagnosed either with extra-pulmonary tuberculosis, or non-first-line RHZE treatment, have been excluded. The rationale for this last criterion was due to the fact that RHZE is the most commonly used anti-TB drug scheme, has the shortest duration, and yet could potentially have its success rate improved. Data is collected in a regular basis, along 6 months of treatment, by using questionnaires for first consultation and follow-up. Information analyzed includes clinical and laboratorial features of the tuberculosis disease, and individualized characteristic patterns of patient and his/her evolution. Outcomes of the study include difference between the homeopathic medication and placebo in: clinical evolution of the disease, clinical evolution of patient miasmatic pattern, antibiotic resistance development, RHZE adverse effects, and tuberculosis resulting sequelae.