Homeopathic Treatment of Attention Deficit Hyperactivity Disorder: A Controlled Study

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Abstract

Forty-three children with attention deficit hyperactivity disorder (ADHD) were alternately assigned to either placebo or homeopathic treatment in a double-blind, partial crossover study to determine the effectiveness of homeopathy for this disorder. Medicines or placebos were given to parents or carers and were administered to children by the parent or carers. After 10 days children in the placebo group were given homeopathic medicines. Statistical comparisons were made on the basis of parent or carer ratings of ADHD behavior before and after treatment. Scores for subjects initially in the placebo group were compared with those initially in the homeopathic group; and scores for subjects initially in the placebo group were compared with scores for the same subjects after they received homeopathic medicine. Statistically significant differences were found for both comparisons, supporting the hypothesis that homeopathic treatment is superior to placebo treatment for ADHD.

Keywords: Attention deficit hyperactivity disorder; Double blind study.

Introduction

The growing popularity of alternative medicine warrants experimental confirmation of its effectiveness. Fifty of the 135 medical schools in the United States are offering courses in alternative medicine and some, such as the University of Virginia Medical School, have mandated instruction in this area.[1] Practitioners of homeopathy have claimed success with a variety of psychiatric illnesses, including attention deficit hyperactivity disorder.[2]

ADHD is the most frequently diagnosed psychiatric condition for children, reportedly afflicting some 3-5% of children in the United States.[3] It is now generally accepted that it is a brain disorder with a biological basis and a genetic influence.[4] Children with ADHD may alienate, anger, and exasperate peers, teachers, parents, and carers and fail to learn well in school due to their impulsiveness, inattention, and overactivity. They are frequently aggressive, disruptive, and uncontrollable.

Most of these children have been prescribed some type of stimulant medication, such as Ritalin® or Cylert®, or oral antihypertensives such as clonidine. These medications are often quite effective, but involve the risk of side-effects, and most of them are not recommended for children under the age of 6. While about 75-80% of patients properly diagnosed with ADHD respond to the first stimulant drug tried, about 20% do not or have adverse reactions.[5] Behavior modification and dietary changes have been found helpful in some cases.[6] Neurofeedback (using EEG biofeedback) can be effective,[7] but is lengthy and costly. A safe, effective, and affordable alternative to standard medications is certainly desirable. Clinicians in the field of homeopathy have reported good results with homeopathic medicines in the treatment of attention deficit hyperactivity disorder, and other psychiatric disorders, although experimental evidence in support of their observations has been lacking. The current study was designed to provide the first evidence of such efficacy.

Method

Subjects were children referred to me for psychological or neuropsychological testing. Each child selected for inclusion in the study was thus given an extensive battery of psychological tests resulting in a diagnosis according to the *Diagnostic and Statistical Manual of the American Psychiatric Association* (DSM-IV).

Children meeting the diagnostic criteria for ADHD, predominantly hyperactive-impulsive type, were then assigned alternately to the placebo or homeopathic condition in the order in which they were referred for testing. To meet the criteria for such a diagnosis, the level of severity of the hyperactive behavior had to be at or beyond the criteria used in the DSM-IV, ensuring that the behavior of all the children was comparable.

Case-taking information for the selection of homeopathic medicines was obtained at the time of testing. All the children were living in foster homes or with their parents under the supervision of social workers. Thirty-five percent of the children were Black, 18% Caucasian, and 47% Hispanic; 58% were male and 42% female. The average age was 10 years. Six children were on Ritalin®, Cylert®, or clonidine (anti-ADHD medication). All 6 showed signs of ADHD despite this medication. No children were accepted if on anti-ADHD medications for less than 6 weeks. Three children (all in the verum condition) were excluded from the study because of changes of dosage in their anti-ADHD medication following the administration of homeopathic medicines, such that changes in ADHD behavior could not clearly be attributed to the homeopathic medication. Informed consent was obtained from the social worker or legal guardian for each child.

The investigator had no further contact with the children following the initial testing and case-taking interview,

which were carried out in the foster homes or facilities in which the children lived. Parents or carers were sent the placebo or homeopathic pills by a parcel delivery service about one week following testing. Neither the carers, who administered the pills, nor the children receiving them were aware of whether the pills were verum or placebo. Bottles containing the pills for both conditions were identical, as were the pills, and each bottle was labeled only with the first name of the child. Written instructions were included regarding how to administer the pills. Six pills were taken daily at one time, for up to 5 days or until a notable change occurred. Apart from sending these written instructions, there was no further communication between the investigator and carers until follow-up ratings were collected.

Homeopathic medicines were selected individually for each child according to standard homeopathic procedures by the investigator, who has practiced homeopathy for 4 years. The computerized RADAR program for repertorizing was used. The potency of all remedies was 200C, on the basis of a separate pilot study done with 15 ADHD subjects in which a trend was found for medicines at 200C to be more effective than the same or similar remedies at 30C.

Parents and carers were contacted by telephone about *10 days following* each administration of the homeopathic medicines or placebos to obtain follow-up ratings, and again about 2 months after the last medication for a follow-up interview. Parents or carers rated the children on a simple 5-point scale of observed changes in hyperactivity over the 10-day interval, with zero at the mid-point. Changes in hyperactivity had to be observed in the home and/or reported by teachers at school. Respondents rated changes in hyperactivity in the following terms: much worse (-2); a little worse (-1); no change (0); a little better (+1); and much better (+2).

When a second or third medicine was given, ratings were again obtained after about 10 days. When ratings for subjects receiving homeopathics indicated little or no improvement, a new medicine was given. A second medicine was given to 18 of the 43 subjects, and 7 of these required a third. No further medicines were administered after 3 tries, or once the carer reported improvement at the 'much better' level.

Results

Comparison of improvement scores was done using Student's t-test, based on the assumption that samples were drawn from populations of means with equal variances. A two-tailed test of significance was used.

Although the use of more than one homeopathic probably acted to provide a more valid test of whether homeopathic treatment (as usually practiced) is superior to placebo with ADHD, objections may flow from the fact that subjects in the placebo condition received only one prescription while some subjects in the homeopathic conditions received 2 or more. Critics could demand that, if all variables are to be held constant except the independent variable (the substance prescribed), strict comparison should involve scores derived after the first homeopathic prescription only. This comparison was done, with results as follows. The first such comparison involved improvement ratings for subjects receiving placebo vs ratings for those receiving only homeopathic medicines, for the first homeopathic medicine. The mean improvement scores were 0.35 for the placebo group and 1.00 for the verum group (Fig. 1). The value of t was 2.16, which is significant at the 0.05 level.

The second comparison flows from the partial crossover design of the study, in which the placebo group was subsequently given homeopathic medicines and compared against itself. (It was not possible to do a complete crossover design as placebos cannot follow administration of homeopathics, due to their assumed lasting effects). In this comparison, scores for the subjects in the placebo condition were obtained following the administration of placebos, and then obtained again following the first homeopathic.

The mean improvement scores were 0.35 for the placebo group and 1.13 for the crossover group. The value of t was 2.43, which is significant at the 0.02 level. The null hypothesis was thus rejected in both these comparisons.

Supplementary comparisons were made to determine the additional advantage of using more than one medicine. The first comparison involved improvement ratings for subjects receiving placebos (n=23) vs ratings for those initially receiving one or more homeopathic medicines (n=20). If more than one homeopathic medicine was given, the improvement score from the best one only was used. The mean improvement scores were 0.35 for the placebo group and 1.63 for the verum group (Fig. 2). The value of t was 3.2, which is significant at the 0.01 level. The null hypothesis, that there is no significant difference in mean improvement scores, was thus rejected.

In the second such comparison,

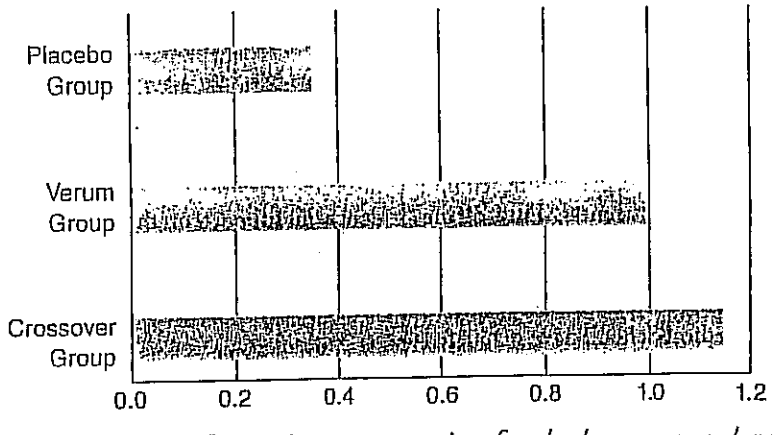

Fig. 1: Comparison of mean improvement ratings for placebo, verum, and crossover conditions, first remedy only.

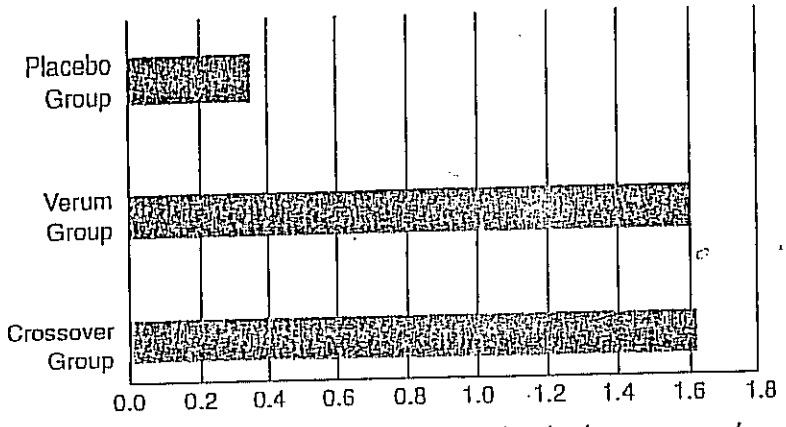

Fig. 2: Comparison of mean improvement ratings for placebo, verum, and crossover conditions, multiple remedies.

improvement scores for the subjects in the placebo condition were compared with their own scores following administration of one or more homeopathics. Again, if more than one homeopathic was given, the improvement score from the best one only was used. The mean improvement scores were 0.35 for the placebo group and 1.65 for the crossover group. The value of t was 3.33, which is again significant at the .01 level. The null hypothesis was again rejected. Mean improvement scores for the verum and crossover groups were nearly identical.

Follow-up interviews were conducted with the carers of the children about 2 months after their last improvement ratings. Of those who showed improvement during the study, continued improvement was found for 57%, without further use of homeopathics. Twenty-four percent continued to show improvement for several days or weeks following the homeopathic medicines, but had relapsed by the time of the follow-up interview. The remaining 19% of the respondents indicated positive results were obtained only while taking the homeopathic medicines.

The medicines found to be most successful were *Stramonium*, *Cina*, and *Hyoscyamus niger*. To a much lesser degree, *Veratrum album* and *Tarentula hispanica* were also found useful. As the respondents for the homeopathic intake information were predominantly foster mothers, it was often the case that the detailed information needed for drug selection was unknown to them, or that they were unable or unmotivated to provide it. In such cases, *Stramonium* was given first on the basis of Herscu's observation that it is of great value with many hyperactive children, even when additional remedies are indicated.[9] *Stramonium* given under these conditions was in fact quite successful.

Stramonium was also specifically indicated when the child exhibited numerous fears (especially of the dark or of water) or symptoms of post-traumatic stress disorder, such as startle responses or intrusive thoughts of traumatic events. *Stramonium* was used when angry rages occurred in a context of several fears or phobias or appeared to begin only after traumatic experiences. It should be noted that the foster children in this study included many traumatized, physically and sexually abused children, probably explaining the high proportion of *Stramonium* responders (35%).

Cina was found to be very useful for children who were physically aggressive, prone to frequent fighting and arguing, and who had tantrums when disciplined or told what to do. The foster children in this study included many children with serious behavioral problems, and this may explain the large percentage of children who responded well to *Cina* (19%). *Hyoscyamus niger* was useful with children who exhibited sexualized symptoms of any type, and with those who exhibited typically manic sorts of symptoms (pressured speech, very high energy, and indiscriminate positive evaluations). *Hyoscyamus* children were sometimes described as wild or impossible to control. *Hyoscyamus* was found to be the best medicine for 19% of the sample. Other medicines were found to be useful, though much less frequently. *Tarentula hispanica* and *Veratrum album* proved useful in a few cases in which there was endless activity without characteristics that would suggest the other medicines above. In all, 8 different medicines were found useful.

Discussion

Some aspects of methodology merit discussion. This study was double-blind in that neither the subjects nor the persons administering the pills and rating changes in improvement were aware of which pills were placebo or verum. The investigator, however, who was not blind to these conditions, contacted the carers to obtain ratings from them. It is conceivable that, in recording their ratings, he could have inadvertently influenced outcomes in favor of the hypothesis. Replications or subsequent studies should include procedures to eliminate this possibility.

Carers were not informed of the use of placebos, a decision which followed from a separate pilot study in which they were informed that placebos would be used. Carers in that pilot study nearly all believed that an absence of results from the pills initially given, whether placebos or not, occurred because the pills were placebos. This caused them to believe that subsequent pills were verum, and they communicated this to the children, undoubtedly producing a placebo effect. Because of this, it was decided that a valid comparison of verum vs placebo conditions could not be made if the use of placebos were revealed to the carers. Because a valid comparison of conditions could not be made if the use of placebos were revealed, the procedures are in accord with prevailing guidelines for informed consent.[10]

The possibility was considered that when 2 or more homeopathic medicines are given, expectations of a positive response by the parents or carers could

increase with each, and they could somehow communicate this to the children. If so, this could have resulted in a positive (or more positive) response due to the placebo effect. This would have biased the results in favor of the hypothesis. To determine if this actually occurred, parents and carers of children receiving a placebo and a homeopathic medicine or more than one homeopathic, were asked to compare their expectations of a positive result for the first and for subsequent prescriptions. None of the respondents, however, reported rising expectations with more than one prescription. Seven reported no change in expectations, and all the rest reported decreasing expectations.

A 5-point rating scale was used rather than published rating scales such as the Connors' Rating Scales[11] because a separate pilot study indicated that carers responded to rating scale items with an extreme response set, or 'halo' effect, which obscured or eliminated the utility of most items for describing differences in behavior. Items with negative or positive connotations received similar ratings accordingly as the child was seen to be generally better or worse, whatever the item content.

Carers seemed better able to understand and respond accurately to the global 5-point scale described above. It may be noted that combining the ratings on this scale by adding the scores for all subjects in a treatment condition requires an assumption that this is a ratio scale, which it is not. However, this procedure probably did not systematically enhance the probability of either positive or negative results. Improvements, when they occurred, were usually reported by about the third day of treatment. This unusually rapid response to homeopathic treatment could possibly reflect the physiology of the illness treated, which apparently does not involve any sort of physical lesion or structural changes.

Lubar[7] found that ADHD is the result of slowed EEG brainwave frequencies in the area of the vertex, with the predominant frequency in the 4-8 hertz range. When brainwave frequencies in this region were trained using biofeedback to occur at frequencies of 13 hertz or above, the ADHD resolved, without treatment of any other kind. When symptoms returned, the children were quickly able to control them. Thus ADHD does not appear to reflect a lesion or change in tissue which must be resolved prior to improvement in behavior. This may allow the homeopathic medicine to act relatively quickly.

No separate ratings for impulsiveness were made. Some psychological tests for ADHD involve separate scales of hyperactivity and impulsivity (e.g., the Attention Deficit Hyperactivity Disorder Test[12]), since the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) mentions impulsivity and hyperactivity as separate symptoms. In fact, factor analyses of questionnaire items for ADHD, such as those for the Connors' Rating Scales, have resulted in a combined hyperactivity-impulsivity factor, but no separate impulsivity factor. None of the ADHD children in this study were described as impulsive without being hyperactive, and there appeared to be a nearly perfect correlation between hyperactivity and impulsivity from the carers' point of view.

The hypothesis that homeopathic treatment of ADHD is superior to placebo treatment is given support by the results above, and a preliminary step toward verifying the utility of homeopathic medicine in the treatment of psychiatric disorders has been made. One experiment cannot prove the hypothesis tested in this study, much less the efficacy of homeopathy for psychiatry in general, and so an extensive body of further studies is needed. The current study does, however, provide support for the utility of homeopathic medicines in the treatment of ADHD.

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