Treatment of hyperactive children: Increased efficiency through modifications of homeopathic diagnostic procedure

Heiner Frei, Klaus von Ammon, André Thurneysen

Abstract

The rigorous test to which homeopathy was subject in the Bernese ADD/ADHD double blind trial necessitated an optimized treatment concept that would meet the highest standards. *Methods:* The optimization was performed in three steps: 1. In successfully treated children, preceding prescriptions leading to an insufficient response were analysed by means of a general questionnaire to identify unreliable symptoms. These symptoms were consequently precluded from repertorization. 2. Polarity analysis, a further development of Boenninghausen's concept of contraindications, was introduced in response to the frequently one-sided symptoms. This enabled us to use comparatively few but specific symptoms to identify the medicine whose genius-symptoms exhibits the closest match to the patient's characteristic symptoms. 3. In the next step we investigated the influence of the primary perception symptoms on the result of the repertorization. Perception symptoms are not normally recorded during a patient interview even though they are among the most reliable facts related by the patients. At the same time we were able to improve the continuity of improvement of ADHD symptoms using liquid Q-potencies. *Results:* Using the aforementioned questionnaire, polarity analysis, and including perception symptoms, the initial success rate of the first prescription improved from 21% to 54%, the success rate of the fifth prescription improved accordingly from 68% to 84%. Hence we were able to reach a significant outcome in favour of homoeopathy in the double blind study. Finally, we illustrate the new methodology using a case example.

Key words: ADHD, homeopathic-treatment, unreliable symptoms, polarity analysis, perception symptoms, Q-potencies

Introduction

The Attention-Deficit/Hyperactivity Disorder(ADHD/ADD) occurs in 3-5% of all children and is a combination of various cognitive disorders with hyperactivity/impulsiveness or passivity[1,2]. (Throughout the remainder, the more frequent acronym ADHD is used for simplicity). According to Conners Global Index (CGI), which is also used for evaluating ADHD-treatment in conventional medicine, the 10 most frequent ADHD-symptoms are: the patients are irritable, impulsive; weep easily and frequently; are fidgety; always on the move; destructive; don't finish what they started; easily distracted; tend to quick and strong mood swings; are easily frustrated; and interrupt other children. (The intensity of symptoms is graded on a scale from 0=not at all, to 3=very strongly)[3].

Treatment of ADHD belongs to the most difficult challenges in paediatrics. It is the task of the homeopathic physician to find the best suited medicine based on the individual and characteristic symptoms of the patient. The success rate using conventional patient interview techniques (i.e., according to Organon §§ 82-95)[4] is at only 21% surprisingly low[5], while the average success rate with other complaints treated homoeopathically may easily reach 65-75%[6]. This is caused by the fact that ADHD is frequently a one-sided complaint, i.e., there are no other symptoms besides those related to ADHD, and these are usually reported in a stereotypical way. Frequently the parents find it very difficult to describe any other symptoms besides those listed in CGI. Notably, many parents tend to be unsure when they observe symptoms in their children – a fact which is probably connected to the extreme variability of the ADHD-patient's behaviour. A well suited remedy, once found despite those difficulties, given in a 200 C as a single dose, usually effects a noticeable improvement lasting on average between two and five months[5]. Single doses, however, may lead to significant fluctuations in the case's progress, since it is difficult to gauge the right moment to prescribe the next higher potency. Regarding the Bernese ADHD-double blind study[7], in which homoeopathy was subjected to a rigorous scientific test, we therefore had to optimize the treatment concept. *Objectives* of this work were at one hand to increase the success rate of prescriptions and on the other hand to improve the stability of achieved improvements. The latter has proved to be susceptible to external influences such as problems at school or tensions in the family. The optimization process encompassed three consecutive stages, so that knowledge gained in the previous optimization step

could be applied in the following (Table1). Already from the beginning, Q-potencies were used in order to achieve a more stable case progress.

Table 1: Steps to increase efficiency of homeopathic treatment of ADHD

Problem	Solution
Low success rate	Identification of unreliable symptoms using a repertory-specific questionnaire
Difficult differential diagnosis	Polarity analysis as comparative materia medica
Paucity of specific symptoms	Use of pathognomic perception symptoms for repertorization
Unstable remedy action	Use of Q-potencies

Methods

This paper is presented as a *report of our experience* in which the data are *documented prospectively*. It is not meant as a strictly scientific study.

Inclusion criteria: Included in this study were patients of a paediatric-homoeopathic practice, aged 2-16 years, who were diagnosed with ADHD according to DSM-IV criteria[1], and who were treated only with homoeopathic medicines.

Outcome parameter: The parents performed a CGI rating after each treatment stage, i.e., after every four weeks. A prescription was counted as a "hit" when it consequently resulted in an improvement of the CGI score by at least 9 points or a reduction of the initial score by at least 50%. In talking to the parents we gained an impression of the stability of improvement, which was not expressed in a more objectively measured quantity.

Optimization steps

1. General questionnaire

In order to identify unreliable symptoms we used a *general questionnaire*, which listed ADHD-symptoms as well as the most common accessory symptoms (i.e., symptoms occurring at the same time yet unrelated to ADHD). The questionnaire was used until 100 patients had achieved a substantial improvement of their symptoms. Then we analyzed the failed prescriptions, which led to no or only

insignificant improvement, and which predated the successful medicine in each patient. The goal was to identify those symptoms which prevented the prescription of the primarily best suited remedies. Each symptom which led at least once to a failed prescription was included in the list of unreliable symptoms, and then precluded from the repertorisation in further patients

2. Polarity analysis

In the next step we searched for a way to better match the characteristic patient symptoms with the "genius symptoms"[8] of a homoeopathic medicine, thereby improving the reliability of the prescriptions. To this end we started with Boenninghausen's idea of contraindications and developed what we call polarity analysis: almost every homoeopathic *medicine* includes a number of polar symptoms. These are symptoms which also encompass their opposite, e.g., desire to move/aversion to move, thirst/thirstless, warmth ameliorates/warmth aggravates, etc.. A medicine may exhibit both poles, usually however in different grades. According to Boenninghausen, high grade symptoms (grade three and four) correspond to the characteristics of the medicine. In choosing the meidcine we have to find the one, whose characteristics best corresponds to the characteristic patient symptoms. All important symptoms of the patient ought to be covered by the correctly chosen medicine, preferably in as high a grade as possible. If, in a given polar symptom, the opposite is covered by a particular medicine in a high grade, whereas the pole exhibited by the patient occurs only in a low grade, then this medicine – according to Boenninghausen – is contraindicated and cannot cure the patient. *Nux-vomica,* for example, has *aversion to movement* in third grade, *desire to move* however only in first grade. Consequently, *Nux-v* will not likely cure a patient who exhibits a strong need to move, even though it covers this symptom in principle. Boenninghausen used this method to check his choice of medicines[8].

Polarity analysis is a further development of Boenninghausen's knowledge of genius symptoms and contraindications: adding the grades of a polar patient symptom for each likely medicine and subtracting the grades of the corresponding polar opposite symptoms, one arrives at the *polarity difference.* For example: a patient suffers from tonsillitis with the following symptoms: < swallowing, < speaking, < cold food, < after waking, > after eating, thirst increased. All those symptoms are polar and covered by 19 medicines. However, only three of those are not contraindicated according to

Boenninghausen: *Natrium carbonicum, Mercurius solubilis* and *Magnesium carbonicum*. We are going to illustrate the concept of polarity difference for these three medicines:

Medicine	Nat-c	Merc	Mag-c
Patient symptoms	**Grade of symptoms**		
< swallowing	1	3	2
< speaking	4	1	2
< cold food	1	2	1
< after waking	4	4	3
> after eating	4	1	1
thirst increased	2	4	1
Total	*16*	*15*	*10*
Opposite symptoms			
> swallowing	1	2	1
> speaking	0	0	0
> cold food	0	2	1
> after waking	1	0	0
< after eating	3	1	2
thirstless	1	1	0
Total	*6*	*6*	*4*
Polarity difference	**10**	**9**	**6**

The polarity difference is the sum of the grades of patient symptoms minus the sum of the grades of opposite symptoms.*The higher the polarity difference, the more likely the medicine matches the characteristic symptoms of the patient, provided there are no contraindications.* A polarity difference of 0 or less (i.e. negative values) points to medicines which cover the patient symptoms in an unspecific way, i.e., do not cover all patient symptoms with their genius symptoms. Such medicines have very little chance of curing the presenting complaint in the patient. According to our example, *Nat-c* exhibits the highest probability to cure, *Merc* the second highest. Using this method, the best suited medicine of a repertorization result containing several

medicines, which all cover the patient symptoms, can be more readily identified. The algorithm of polarity analysis has been since integrated in the repertorization program of Bönninghausen Taschenbuch 2000[9] and others.[10] The case example given further down underlines the practical application of polarity analysis.

3. Test of symptoms of perception

Since the list of unreliable symptoms obtained in the first optimization step proved rather long (c.f. results), we tried to identify *symptoms of higher reliability* in a next step. ADHD, which according to current understanding has probably genetic causes, leads primarily to perceptive disorders, i.e., disorders of selection and processing of sensory perceptions. These may, in variable combinations, affect the visual, tactile, auditory, proprioceptive, olfactory, and gustatory systems as well as the perception of temperature. Most perception symptoms do not spontaneously enter in a homoeopathic patient interview, because the *effects* of the impaired perceptions are more obvious and incommodating than the primary perceptive defects. Hence, as a further optimization step, we located those rubrics (primarily modalities) in Bönninghausen Taschenbuch 2000[8] which exhibit a direct link to perception symptoms. Modalities are generally the most reliable of all characteristic symptoms, since they are more easily recognized and related by the patient then e.g., sensations or mental/emotional symptoms. The following rubrics were thus identified:

Symptoms of perception

Tactile	Touch aggravates (aversion to touch)
Visual	Light aggravates (hypersensitivity light),
	Straining eyes aggravates (e.g., restlessness after
	TV or computer games)
Auditory	Sense of hearing too sensitive
Olfactory	Sense of smell too sensitive
Gustatory	Sense of taste diminished (adds spices to
	everything)
Temperature	Warmth aggravates/ameliorates
	Cold aggravates/ameliorates
	Wrapping up warmy aggravates/ameliorates

Processing	Comprehension, cognition, thinking slow,
	Weak memory,
	Absent minded, lack of concentration
Gross motor skills	Physical restlessness
	Desire to move
	Movement ameliorates
	Aversion to movement
Fine motor skills	Writing aggravates (writes tense, tires easily)
Time of day	After waking aggravates
	Before sleep aggravates
Mind	Irritability
	Sadness

A number of other symptoms, which on first sight also pertain to the patient's perception, turned out to be unreliable in practical evaluation: < reading, < talking, < soft touch, > touch, physical clumsiness, falls easily/frequently, < rocking, < riding in car, over-sensitive sense of taste, flabby muscles, tense muscles.

After an in-depth evaluation, an ADHD-questionnaire was designed, which includes the afore mentioned perceptive symptoms. Additionally, it includes a list of unreliable symptoms, so that parents may identify particularly notable observations not contained in the questionnaire.

4. Use of Q-potencies

Treatment with single doses, as mentioned in the introduction, may cause strong fluctuations in treatment effect, which is tiring and stressful for everybody involved. In order to improve the stability of the treatment effect we used liquid Q-potencies from the start: initially the children received a Q3 every other day. If the parents reported that the patient fared worse on the off days, we changed to a daily regimen. After four weeks the treatment effect was assessed. In case of a favourable assessment, the patient continued immediately with the Q6, again for four weeks, and so on up to Q42 or until other symptoms indicated a change of medicine. After reaching the Q42 (the highest available potency) we started again with low Q-potencies, this time with Q4, followed by Q7, Q10, and so on. As soon as a stable improvement was reached, the follow-up intervals were extended to four months.

Results

Introducing the *general questionnaire* resulted only in a slight improvement by raising the success rate of the first prescription from 21% to 28%, after five prescriptions from 68% to 78%. Interpreting the results of the questionnaire with respect to reliability of symptoms told us by the parents, we learned that most everything that was thought to be reliable for the selection of a medicine in other illnesses could be told in a misleading manner by the parents, increasing the possibility of failed prescriptions (Table 2). On the other hand, sometimes the corresponding observations were correct, so that the overall result was an uncertainty with respect to the symptoms to be used. All unreliable symptoms were afterwards excluded from repertorization.

Table 2: Symptoms which potentially lead to failed prescriptions

Included are symptoms which led to wrong prescriptions preceding the correct homeopathic medicine in 100 patients with (finally) successful treatment of ADHD.

Mental/emotional symptoms

- timidity
- fear of future events
- bashful
- fear of thunderstorms
- seriousness, fussy
- compassion
- day-dreaming
- illusions
- loquacity
- obstinate
- dictatorial
- haughty
- quarrelsomeness
- swearing
- jealousy
- covetous, avarice
- impolite

- violence
- irresolution
- disconsolate
- discontented
- introvert
- aversion to washing

Modalities of mental symptoms

- < being alone
- < company
- < crowd
- < strangers
- < darkness
- < grief
- < consolation
- < reprimands
- < anger
- < rage
- < thinking of complaints
- < music
- > music

Mental-motoric phenomena

- tics
- grinding teeth
- stuttering
- biting nails

Intellectual symptoms

- weakness of memory
- < mental exertion

Perception symptoms

- > touch

- > soft touchh
- < touching hair
- < pressure of clothes
- travel sicknes
- disgust

Motor symptoms

- desire to move
- muscle tenseness
- repetitive motions
- clumsiness
- falling frequently, easily
- < writing

General modalities and desires

- < noon
- >fresh air, open air
- > walking outdoors
- > after sleeping
- < lack of sleep
- < full moon
- > massage
- > physical exertion
- desires fresh air
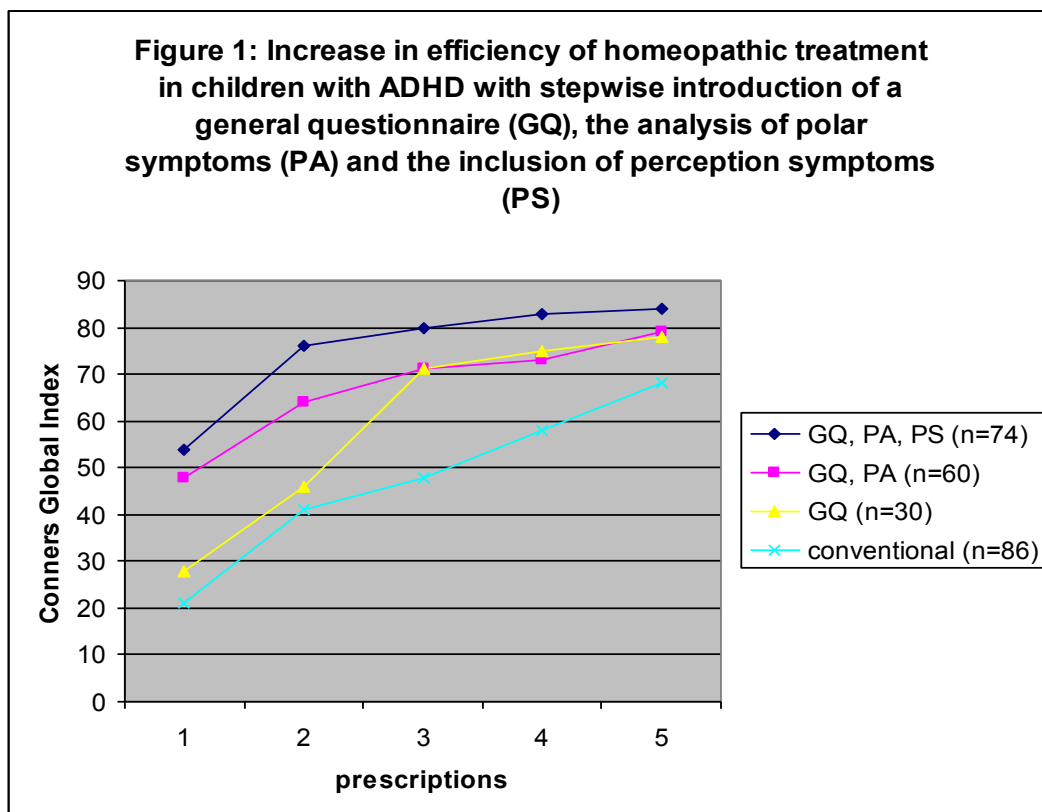- desire to wrap oneself
- desire to doff clothes

Food

- < various foods
- desires various foods.
- aversion to various foods
- < hunger
- > eating
- > drinking

Weather and climate

- < cold-wet weather

- < autumn

- < winter

- < windy weather

- < change of weather

- < hot weather

Introduction of the *polarity analysis* increased the success rate of first prescriptions to 48%, whereas the success rate after five months remained practically unchanged at 79% (previously 78%). Focusing the patient interviews on the perception symptoms, i.e. introducing the ADHD-questionnaire, led (in combination with the general questionnaire and the polarity analysis) to a first prescription success rate of 54% and a five months success rate of 84%. The three optimization steps (general questionnaire [GQ], polarity analysis [PA] and ADHD questionnaire with perception symptoms [PS]) were performed consecutively und their effect on the precision of the prescription recorded (Figure 1).

Figure 1: Increase in efficiency of homeopathic treatment in children with ADHD with stepwise introduction of a general questionnaire (GQ), the analysis of polar symptoms (PA) and the inclusion of perception symptoms (PS)

Figure 1:

Stepwise improvement of results by modifications of homeopathic diagnostic procedure:

Conventional: Classical treatment approach according to Organon §§ 82-95

GQ: History taking with a general questionnaire for standardisation

PA: Analysis of polar symptoms for final materia-medica comparison

PS: Introduction of symptoms of perception with an ADHD-questionnaire

A prescription was counted as "hit" if it consequently lead to an improvement of the CGI score by at least 9 points or a reduction of at least 50% of the initial score.

It is gratifying to note that the optimization process did not result in a reduced pool of medicines. To illustrate this point see Table 3, which lists those 27 medicines which resulted in a lasting and increasing improvement used in 160 ADHD-patients in both of our clinical studies[7,11]. Treatment with Q-potencies yielded a significantly improved continuity of the medicine's action, which also cause a higher compliance of parents when compared to the single dose regimen.

Table 3: Frequency of prescriptions in the case of 160 successfully treated ADHD patients

Calc-c.	14 %	Chin.	3 %
Lyc.	11 %	Lach.	2 %
Sulf.	10 %	Ph-ac	2 %
Nux-v.	6 %	Puls.	2 %
Phos.	6 %	Staph.	2 %
Caust.	5 %	Ars. .	1 %
Ign.	5 %	Hyos.	1 %
Sil.	5 %	Nat-m.	1 %
Merc- s.	4 %	Caps.	<1 %
Bell.	4 %	Agar.	<1 %
Cham.	4 %	Bar-c.	<1 %
Sep.	4 %	Bry.	<1 %
Hep.	3 %	Stram.	<1 %
Arg-n.	3 %		

Table 3: Homeopathic medications from patients in two ADHD-trials[7,11], leading to improvements of 50% or 9 points in the Conners-Global Index.

Case example

In conclusion we would like to illustrate the introduced methods using a case example from the double blind study: Marco (name changed), a 12 year old boy, draws attention to himself because of his impulsive, restless and at times difficult behaviour. He is always on the run, can never finish anything, and becomes frustrated quickly in difficult situations. He develops strong head aches after lack of sleep, excitement, sadness or fear. As a small child he used to be very fearful, but not anymore today. His psycho-motor development was toward the slower side but within normal bounds. If he feels well, Marco is an open, sociable nature boy. Even in situations which are difficult for him he remains approachable and consolable. He has difficulties in school due to serious learning and attention problems, and is scarcely able to follow lessons in a normal class room setting. His parents rated his CGI hyperactivity score at 20, corresponding to an ADHD of medium severity. Neurological and neuropsychological examinations at the University Clinic Bern confirmed the ADHD-diagnosis.

On examination I find a tall, restrained, slightly adipose patient with a low muscular tone, who is able to remain relatively calm for a hyperactive child. The only notable feature is his rather pale complexion.

The parents mark the following symptoms on the ADHD-questionnaire:

- Desire for movement
- Warmth: worse
- Uncovering: better
- Looking at something close up: worse
- Noise aggravates
- Understanding difficult
- Writing difficult, cramped, tiring
- Muscles flabbiness.

Symptoms listed in the *general* questionnaire except *flabbiness of muscles* were not used for repertorization, such as overweight, head ache due to lack of sleep and strong emotions, profuse perspiration, aggravation from mental exertion, amelioration from motion, outdoors, and physical exertion – they may lead to failed prescriptions as described earlier.

The repertorization was performed with the Boenninghausen Programm. Their results are listed in Table 4.

Table 4: Repertorisation with the Boenninghausen program

	Lyc.	Calc.	Cham.	Chin.	Puls.	Borx.	Bry.	Sil.	Sep.	Nat-c.
Number of hits	8	8	8	8	8	8	8	7	7	7
Sum of grades	24	23	18	15	14	13	10	20	16	16
Polarity difference	**16**	**18**	**11**	**7**	**7**	**6**	**3**	**9**	**2**	**2**
movement, desire for (p) [58]	1	1	4	4	1	1	2	2	1	1
< warmth, in general (p) [73]	2	1	2	1	4	1	1	1	1	1
> uncovering (p) [37]	4	3	2	2	2	3	1		1	
< looking, at something close-up (p) [85]	4	4	1	1	2	2	1	4	3	3
< noises [43]	3	3	3	2	1	2	2	4*	3	3
understanding, difficult (p) [74]	4	3*	2	1	1	1	1	3	4	4
< writing (p) [76]	3	4	1	2	1	1	1	4	3	2
muscles, flabbiness (p) [53]	3	4	3	2	2	2	1	2		2
movement, aversion to (p) [68]	*3/CI*	*1*	*1*	*1*	*2*	*1*	*2*		*2*	*2*
> warmth, in general (p) [90]	*1*	*1*	*1*	*2*	*1*	*3/CI*	*2*	*3/CI*	*2*	*2*
< uncovering (p) [56]			*2*	*2*	*1*	*1*	*1*	*4/CI*	*2*	*2*
> looking, at something close-up (p) [5]										*3*
understanding, easy (p) [17]	*1*								*1*	
> writing (p) [2]										*1*
muscles, tense (p) [34]				*1*	*2*				*4/CI*	*1*

Table 4:

Repertorisation performed with the program of the Bönninghausen Pocket Book 2000.

Normal font: patient symptoms, oblique: opposite symptoms

*   KI=contraindications: in the realm of essence symptoms the opposite pole is in high grade (3, 4), the patient pole however in low grade (1, 2).

** The contraindication of Pulsatilla (weak muscle tone) is only visible in the Amokoor program due to symptom grading which differs from the Bönninghausen Programm.

Seven medicines cover all symptoms, two of them, however, *Lycopodium* and *Borax*, have to be discarded due to contraindications. *Calcium carbonicum* exhibits the highest polarity.

Comparing the *Materia Medica* leads us to exclude *Chamomilla,* since Marco shows no temper tantrums, is not inclined toward violence, and does not complain of increased sensitivity to pain. *China* and *Pulsatilla* cover the patient symptoms in a rather uncharacteristic way due to their low polarity differences of 7, and hence offer

only low probabilities of cure. In favour of *Calcium carbonicum* we have next to the high polarity difference the coverage of accessory symptoms such as *profuse perspiration, pale complexion,* and *slow psycho-motor development.* Also fitting are the discarded symptoms *amelioration outdoors and from physical exertion* as well as *aggravation from lack of sleep and strong emotions.*

Consequently, Marco received *Calc-c* Q3 in liquid form every two days initially, later in daily doses. After one month the mother reports that he is significantly more stress resistant, able to concentrate better, and his CGI-score has declined to 12. Another four weeks later, his CGI-score is only 9. Family and teacher are enthusiastic about the far reaching changes in such short a time. During long-term treatment with rising *Calc-c* Q-potencies, the CGI-score declines further to 6 (Figure 2). This case example shows nicely how, thanks to polarity analysis, relatively few symptoms suffice to identify the most likely medicine.
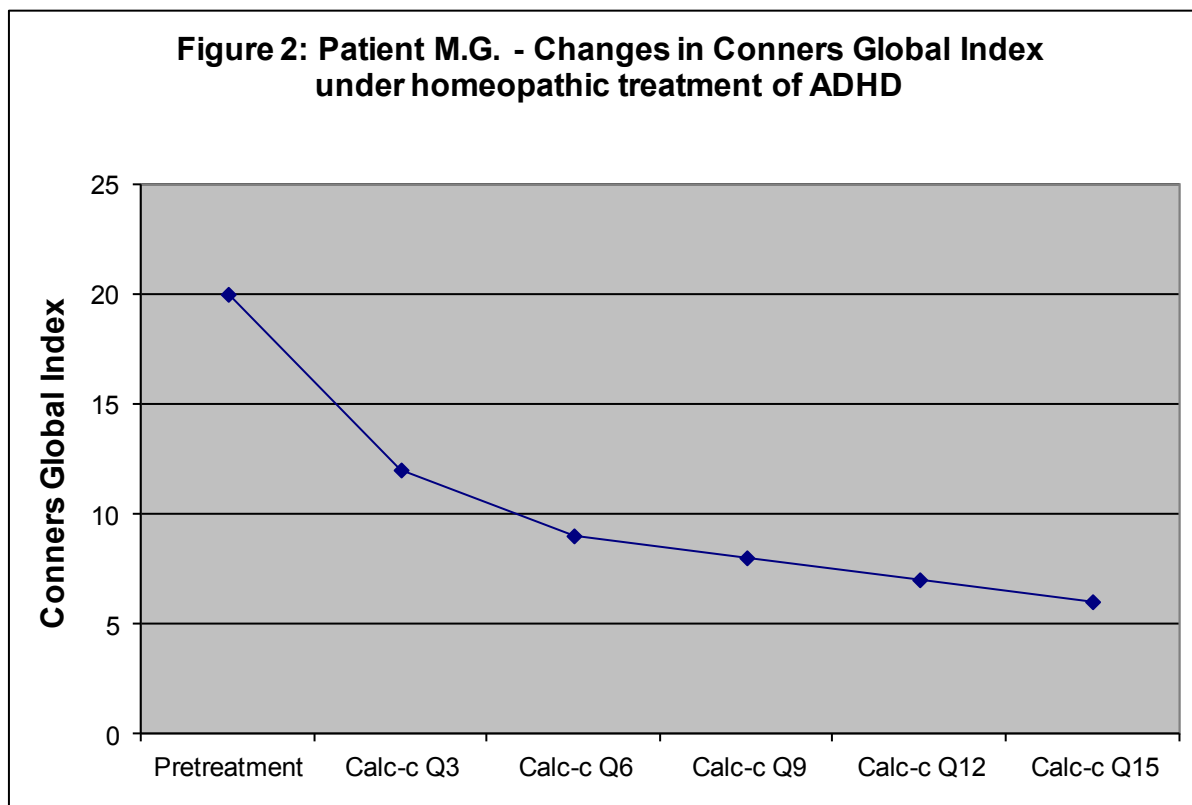

Figure 2: Continuous increase in improvement of Conners Global Index as a function of treatment duration after correct choice of a homeopathic medicine.

Discussion

In deviation from the Organon §§ 82-95, which demand an open case interview, we left Hahnemann's way by introducing *questionnaires.* This step has to be justified carefully, since there is a certain risk to miss individual, characteristic symptoms associated with it. Because the cause of ADHD is, according to current understanding, probably of a genetic nature, we frequently find ADHD-symptoms with one or both parents. Therefore, in the experience of the authors, the rather unstructured description of the family history frequently centers on the unavoidable complaints of school, neighbourhood and siblings much more than on the actual symptoms of the child. To that we frequently observe that the described symptoms are limited to the range of the CGI and therefore exhibit no individual traits of the illness. The questionnaires proved helpful in drawing the parents' attention to those symptoms which have been shown helpful in finding a fitting medicine. Therefore parents are given two to four weeks to familiarize themselves with the truly characteristic symptoms of the child. This frequently helps to avoid having to revise the primary symptoms after a first (unsuccessful) treatment phase. Because in our methodology the medicine selection is based on relatively few but important symptoms, it is decisive that those are truly accurate.

A reliable *polarity analysis* requires at least five polar symptoms. A single inaccurate symptom frequently leads to a failed prescription. Furthermore, it should be noted that the contraindications are the *more important* part of the analysis, since disregarding them almost invariably leads to the wrong medicine, while the amount of polarity difference constitutes only a *relative scale* indicating the best fitting medicine. Altogether the polarity analysis must be regarded as an additional tool with which the precision of the prescription can be again somewhat increased. In parallel to our investigations into ADHD we also checked their influence on the success rate with other patients. Indications are that they lead to a significant increase in the precision of medicine selection.

The introduction of *perception symptoms* into the repertorization violates the (misunderstood) homoeopathic dogma of never basing a case analysis on pathognomic symptoms. Dunham, who initially pointed out this problem, counted only such symptoms which exhibit already more or less pronounced tissue lesions as pathognomic. Later homoeopaths changed the meaning of pathognomic to its current medical definition, encompassing those symptoms pertaining to a conventional

medical diagnosis. This change in interpretation means that even in all respects characteristic symptoms in the sense of Organon § 153 are subsumed under the heading pathognomic. If we exclude such symptoms from repertorization, we are violating the law of similars[12]. A broadening of the pathognomic definition beyond Dunham's tissue lesions seems inadmissible, as shown by the increase of the rate of cure associated with the inclusion of perception symptoms.

Conclusions

A modified Boenninghausen treatment approach has proved optimal in the treatment of ADHD-patients: In his ranking of symptoms the main complaint with its peculiarities comes before the accessory symptoms with their associated peculiarities, while mental/emotional symptoms are only considered afterwards. The polarity analysis evolves and extends Boenninghausen's concept of contraindications. This optimization process required about five years of hard work, during which we had the opportunity to become intimately familiar with the problems associated with the homoeopathic treatment of ADHD-patients. We believe that the significant result in favour of homoeopathy in the Bernese ADHD-double blind study are thanks only to this process.

References

1. American Psychiatric Association *Diagnostic and statistical manual of mental disorders, DSM-IV.* 4th edition. Washington DC: American Psychiatric Association, 1994.

2. Lahey BB, Applegate B, McBurnett K et al DSM-IV field trials for attention deficit hyperactivity disorder in children and adolescents. *Am J Psychiatry* 1994; **151**: 1673-85.

3. Conners CK. *Conners rating scales (revised), technical manual.* Toronto: MHS, 1997.

4. Hahnemann S. *Organon der Heilkunst,* Ausgabe 6 B. Heidelberg: Haug; 1989.

5. Frei H. *Die homöopathische Behandlung von Kindern mit ADS/ADHS.* Stuttgart: Haug, 2005.

6. Frei H. Die Rangordnungen der Symptome von Hahnemann, Bönninghausen, Hering und Kent, evaluiert anhand von 175 Kasuistiken. *ZKH* 1999; **4:** 143-155

7. Frei H, Everts R, von Ammon K et al Homeopathic treatment of children with attention deficit hyperactivity disorder: a randomised, double blind, placebo controlled trial. *Eur J Ped* 2005, **164/12**: 758-767.

8. Bönninghausen C v. *Therapeutisches Taschenbuch 2000*, Hrsg. K.-H. Gypser. Stuttgart: Sonntag, 2000.

9. Bönnighausen Arbeitsgemeinschaft. *Repertorisationsprogramm zum Bönninghausen Taschenbuch 2000.* Sinzig Löhndorf: Bönninghausen Arbeitsgemeinschaft, 2000 (order from: www.boenninghausen.de)

10. Steiner U. *Amokoor Repertorisationsprogramm 2006.* Immensee: Steiner, 2006

11. Frei H, Thurneysen A. Treatment for hyperactive children: homeopathy and methyphenidate compared in a family setting. *Brit Hom J* 2001, **90**: 193-188.

12. Holzapfel K. Zur Kritik der pathognomonischen Symptome, *Zeitschr Klass Hom* 2002, **46/**5:183-193.