Original Article

Exploring the predictive value of specific symptom as prognostic factor: Assessment of group-confined likelihood ratio for symptom 'Headache' in 20 lesser-known drugs

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Abstract

Aim: Assessment of group-confined likelihood ratio (GCLR) for the symptom 'Headache' from among 20 lesser-known remedies clinically verified by the Central Council for Research in Homoeopathy during the period 2012–2018. **Materials and Methods:** Analysis of data of the clinical verification study, which was a multicentric, open-label, observational clinical study conducted at 13 study sites of the council. The 50 medicines that completed the drug proving programme of the council were clinically verified in ascending potencies of 6C, 30C and 200C. Of these, 20 lesser-known medicines allowed analysis of the prevalence and LR of the symptom 'Headache'. These 20 medicines were ordered according to the prevalence of headache, and LR >1 gave an indication what medicines were more related to headache than others. **Results:** The symptom 'Headache' was recorded in a part of the population: 4582 patients where 20 lesser-known medicines were prescribed. Of these medicines, 8 have a GCLR >1, indicating that the symptom headache could indicate these medicines out of the assessed group of 20. Only 5 had statistically significant confidence interval: *Allium sativum, Formicum acidum, Gymnema sylvestre, Avena sativa* and *Persea americana.* Among these, two medicines, *Allium sativum* and *Formicum acidum*, have significantly higher GCLR. **Conclusion:** Of 20 lesser-known homeopathic medicines, two could be considered for the further evaluation of the relationship with headache. These findings should be confirmed in properly organised prognostic factor research in a larger population, not restricted to specific medicines, that enables proper comparison.

Keywords: *Allium sativum*, Headache, Lesser known homoeopathic medicines, Likelihood ratio, Prognostic factor

Introduction

When a homoeopathic doctor with adequate training prescribes a homoeopathic medicine, he/she is able to predict the chance that the medicine will work for the patient, based on individual symptoms and the doctors' prior experience with the medicine.[1] Therefore, in homoeopathic context, symptoms are prognostic factors for the expected effect of a particular medicine.[2,3] Prognostic factor research in Homoeopathy can be assessed by applying Bayes' theorem which tells us how to use practical experience gathered from the past for new situations.[4] It is based on the mathematical law of conditional probability – the probability that a homoeopathic medicine will work increases if a patient has a specific condition (symptom) indicating this medicine. Adding other symptoms indicating the same medicine stepwise increases the chance that the medicine will work.

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Knowledge about the symptoms is represented as repertory rubrics in modern repertories. However, this huge amount of information is collected with questionable reliability.[4-6]

Likelihood ratio

The essence of Bayes' theorem is that if a symptom has a higher prevalence in the 'population responding well to a specific medicine' than the prevalence in the remainder population, the probability of cure increases.[7] The core of this theorem is likelihood ratio (LR). LR defines the relation between prior odds (the odds before the test) and posterior odds (the odds after the test) that something will happen. The relationship is given by the formula:

Posterior odds = LR × Prior odds

LR = Likelihood Ratio

= Prevalence in target population/Prevalence in remainder of population

The transformations between odds and chance are as follows:

- Odds = Chance/(1 − Chance)
- Chance = Odds/(1 + Odds).

The target population, in this case, is the population where the specific medicine has a curative effect. The remainder of the population is the whole practice population minus the target population.

From the formula, it becomes clear that the chance that a medicine will work if a specific symptom is present increases if LR >1, more so if LR is larger. On the other hand, if LR <1, the chance that the medicine will work becomes less.

The calculation of LR is easy and can be done by making a 2 × 2 table of symptom present/absent and population cured by medicine/remainder population.[6]

Challenges using likelihood ratio in single and multiple symptoms

A great advantage of this formula is that it represents the prevalence of a particular symptom instead of absolute occurrence. The existing system of adding symptoms to our Materia Medica based on absolute occurrence in provings or successful cases is obsolete because it will lead to many false entries in our repertories. By applying Bayes' theorem, this shortcoming can be overcome and a better scientific identity is established for Homoeopathy.[7]

Prospective multicentre research of real prevalence and LR of symptoms should be carried on to fine-tune the knowledge regarding homoeopathic medicines and improve prescription accuracy and clinical results.[8,9]

Likelihood ratio, rare remedies and clinical verification

LR investigation is not yet recommended for medicines with infrequent occurrence in the population like rare remedies since it needs large populations. Nevertheless, attempts should also be made to assess LR of symptoms of lesser-known remedies on which the Central Council for Research in Homeopathy in India (CCRH) has been collecting research data for the past many years.

Clinical verification is an ongoing research programme of CCRH that verified many rare homoeopathic drugs where the 'symptomatology' of these drugs is ascertained by assessing the symptoms improved during verification. CCRH has been conducting the drug proving programme since inception on healthy human beings. The symptoms of 20 lesser-known medicines out of many other medicines, which were proved in proving programmes, are here again clinically verified in patients under this programme.

Materials and Methods

These data are collected after many years of research spanning the period (2007–2018) on patients. The study was conducted at 13 institutes/units of CCRH located at Noida, Uttar Pradesh; Shimla, Himachal Pradesh; Imphal, Manipur; Gudivada, Andhra Pradesh; Kolkata, West Bengal; Puri, Odisha; Lucknow, Uttar Pradesh; Guwahati, Assam; Tripura, Agartala; Bhubaneswar, Odisha; Patna, Bihar; Chennai, Tamil Nadu and Port Blair, Andaman and Nicobar.

As per the inclusion criteria, the patients from all age groups and both sexes, having symptomatic similarity with the study medicines, and willing to participate were included in the study. If the patients were taking any acute medicine, they were included in the study after a washout period of 1 week. Exclusion criteria were patients unwilling to participate, patients having a clinical presentation not corresponding with the study medicines and patients on regular medication for any systemic disease. Ethical clearance for the study was taken from the Ethical Committee of the council. After providing patient information sheet in local vernaculars, informed written consent was obtained from the eligible participants or the guardians in case of minors before participation in the study.

The study medicine was procured from a Good Manufacturing Practice (GMP) compliant homoeopathic pharmacy of India in various potencies, namely, 6C, 30C, 200C and 1M and was distributed to above-mentioned institutes/units. After recording the presenting signs and symptoms of the patients in case recording pro forma, the symptoms were repertorised using a repertory prepared for clinical verification by CCRH and then a specially developed Materia Medica was consulted for the final selection of the remedy. If the presenting symptoms of the case corresponded with the symptomatology of the trial medicine, then the medicine was prescribed in 6C potency and was repeated three times a day, till improvement/aggravation occurred when the drug was stopped; otherwise, it was continued for 5/7 days allowing the drug to act. Then, the subsequent potencies such as 30C, 200C and 1M were prescribed following the guidelines defined in the protocol. In cases of improvement under the action of any of the above-mentioned potencies, placebo was prescribed so far the improvement continued. If the improvement stopped, i.e., if the case relapsed or became standstill, then the prescription was

repeated in the same potency. In no case, the same potency was repeated for more than two times. In cases where aggravation of the presenting symptoms resulted under trial without any relief, then change of medicine was considered. When new symptoms appeared after administration of the medicine, and if these new symptoms were mild and did not cause much concern to the patient, placebo was prescribed for 1 week. However, if no improvement followed or worsening occurred after 1 week, then change of medicine was considered. If the new symptoms were severe and cause considerable discomfort to the patient from the beginning, then change of medicine/therapy was considered at once.

In cases where no perceptible improvement occurred after adequate repetition of medicine in different potencies, then it was searched for any obstacle(s) to cure and steps were taken to remove it (when identified) as far as possible. In cases where no response was achieved even after removal of probable obstacle(s), the case was referred for appropriate medical care [Figure 1].

The cases were followed up and assessed once a week or even earlier, if required. Each and every case has been evaluated in depth to find any known causative factors, the etiological factors and also any obstacle to recovery which may hinder the action of the drug, and once found, efforts were made to remove/minimise them.

The symptom 'headache' and group-confined likelihood ratio

It appeared that the symptom 'headache' was recorded in only 20 out of the 50 medicine populations. Considering the high prevalence of this symptom, it is unlikely that this symptom would not be present in the other populations. The most likely cause of not recording the symptom seemed to be the fact that the symptom was not among the proving symptoms. This can be interpreted as recall bias, and therefore, the populations with missing data were disregarded, as explained in the 'Results' section.

In group-confined LR (GCLR), the 'whole population' is confined to a group of the real whole practice population; in this case, the group responding well to 20 medicines.[1] In the present study, the prevalence and GCLR of the symptom headache have been calculated for the 20 medicine populations with recorded data. For each medicine population, we observe a large number of disease diagnosis, clinical conditions and hundreds of symptoms representing them.

It is important to realise that the LR values of a GCLR are valid only for patients with that symptom for the population represented in that research. It is a comparison of the involved medicines which is a relatively small number out of all homoeopathic medicines, and the selection is based on nascent research and expert opinion. If PFR is performed for a subpopulation, the outcome is valid for that subpopulation only. The GCLR thus assessed cannot be extrapolated to a larger population.

For calculating LR and prognostic factor, MS Excel was used and MedCalc software had been used for calculating 95% confidence interval.

Results

The analysed CCRH data on 20 drugs comprised prescription data on 20 drugs, (N) total = 4582; (N) Headache = 859 (18.74% of total). The total number of improved patients was 3929, 777 (19.8%) of them had headache.

This main complaint is a prognostic factor for the success of respective medicines and is in this context considered as homoeopathic symptom. Calculating the GCLR value for the symptom 'headache' for the medicine, *Allium sativum* rendered the following 2 × 2 table and result [Table 1]: LR= (85/136)/(774/4446) =3.59.

The obtained GCLR +>1 suggests that headache is an indication for *Allium sativum*, considering only this group of medicines. This can be explained as follows:

there were 136 cases responding well to *Allium sativum* in this database, i.e., 2.96% of the whole (confined) population of 4582.

Table 2 shows the prevalence of 'headache' in each medicine population. It shows that the population responding well to *Allium sativum* has the highest prevalence of headache (63%), followed by *Formicum acidum* (59%) and therefore also the highest GCLR. The lowest prevalence of headache is seen in the population responding well to *Cynodon dactylon* (3%), indicating a relative contraindication for *Cynodon dactylon* in case of headache.

Following the prevalence in Table 2, we can make a ranking order according to LR of the 20 medicines in this table, if headache is present. This ranking order is just a vague indication of what medicines to prefer out of these 20 if headache is present. However, this would suggest data comparability with other medicines outside this group that is not warranted. It is therefore better to call this 'LR' as 'GCLR' to avoid confusion about the meaning of this 'LR' value. Figure 2 shows the graphical representation of the prevalence of headache in various populations.

Discussion

After a programme for the evaluation of a group of 50 lesser-known medicines by CCRH, data about the prevalence of the symptom 'headache' were available for

Table 1: 2×2 table[7] about the relationship between the symptom 'Headache' and beneficial effect of *Allium sativum*

Symptoms present/absent	Medicine population	Remainder of population	Total population
Headache +	a=85	b=774	859
Headache −	c=51	d=3672	3723
Total	136	4446	4582

LR=(85/136)/(774/4446)=3.59. LR: Likelihood ratio

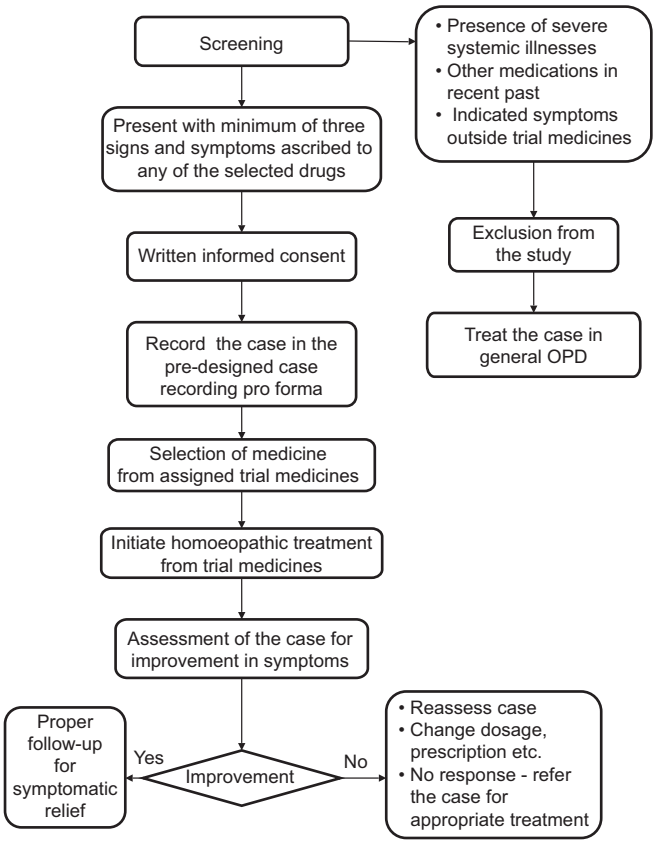

Figure 1: Flow chart of study design

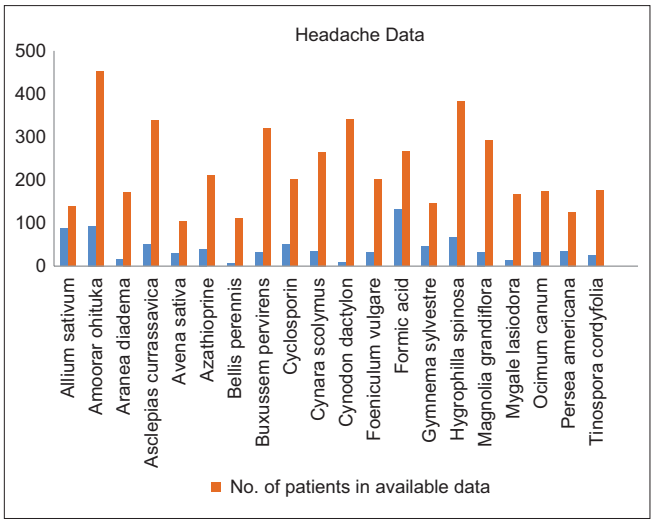

Figure 2: Number of successful prescriptions of 20 medicines, with number of patients with headache for each medicine

20 medicines. According to Bayes' theorem, the higher the prevalence of a symptom in a population that responds well to a specific medicine, the higher the chance that this medicine will work if the symptom is present in a new patient. This enables us to rank different homeopathic medicines according to the predictive value of a specific symptom.

In this evaluation, the prevalence of the symptom headache varied from 3% for the population responding well to *Cynodon dactylon* to 63% for the population responding well to *Allium sativum*, as shown in Table 2. In total, 8 of the 20 medicines had a more than average prevalence of headache but only 2 stand out: *Allium sativum* and *Formicum acidum*. These medicines could be related to headache.

We calculated 'group confined' LRs to indicate what medicines had more than average prevalence of headache, but we stress that these LR values are only valid in the comparison between these 20 medicines, they cannot be used in the comparison with other medicines and these LR values should not be transposed to the repertory rubric.

Reliable prognostic factor research should be prospective, checking the well-defined symptom, in this case, 'headache' in every consecutive new patient. This evaluation programme was not designed as prognostic factor research, resulting in significant shortcomings if we try to interpret the data.

First, the selection of a medicine was based on the presence of at least two proving symptoms. Therefore, the validity of the data of this programme depends on the validity of the proving and the limited number of persons participating in the proving. In the programme, 50 medicines were tested, but only 20 had data about headache. It is unlikely that the other medicine populations had no patients with headache. Therefore, we cannot make any conclusions about the prognostic value of 'headache' for the other 30 medicines.

Second, the design of the study induces confirmation bias; if there is no headache in the proving, the medicine is less likely to be selected. Therefore, we cannot say that the symptom headache excludes the 30 other medicines.

Third, many symptoms, also headache, have a variety of intensities, and for research purposes, a cutoff value for each symptom should be defined, like 'more than once a week', and possibly, also the intensity of headache. A well-defined cutoff value offers the possibility of comparing a prevalence in different populations. It would have been interesting to compare the prevalence of headache in the *Allium sativum* population with, say, the *Natrum muriaticum* population. A mean prevalence of headache of about 20% for this whole population with data present does neither indicate a very high nor low cutoff value. This prevalence is not very different from a prevalence of 14% found in literature.[10]

Fourth, this research did not have clear assessment of causal relationship between prescribed medicine and improvement. There was a mix of acute and chronic cases. In acute cases, many improvements are due to spontaneous recovery. This is less in chronic cases; but here, there could be 'regression to the mean': many diseases have fluctuating intensities and patients consult the doctor if the intensity is at the maximum. After that moment, the complaint becomes less just because of the fluctuation. This kind of improvement cannot be ascribed to the treatment.

With the caveats mentioned above in mind, however, we conclude that the symptom headache could indicate the

Table 2: Prevalence and group-confined likelihood ratio for 'Headache'

Ranking	Medicines	Prevalence headache in medicine population	Medicine population (*n*)	Group-confined LR*	95% CI
1	*Allium sativum*	0.63	136	3.59	3.11-4.15
2	*Formicum acidum*	0.59	215	3.52	3.10-4.01
3	*Gymnema sylvestre*	0.31	131	1.66	1.27-2.16
4	*Avena sativa*	0.30	98	1.60	1.17-2.18
5	*Persea americana*	0.27	114	1.47	1.08-1.99
6	*Amoora rohituka*	0.22	392	1.22	1.00-1.48
7	Ocimum canum	0.22	147	1.21	0.89-1.64
8	Cyclosporin	0.21	186	1.12	0.84-1.50
9	Azathioprine	0.18	197	0.95	0.70-1.28
10	*Foeniculum vulgare*	0.16	173	0.86	0.61-1.21
11	*Asclepias curassavica*	0.16	295	0.82	0.63-1.08
12	*Cynara scolymus*	0.16	219	0.82	0.60-1.13
13	*Hygrophila spinosa*	0.15	343	0.81	0.63-1.05
14	*Tinospora cordifolia*	0.15	166	0.80	0.55-1.15
15	Mygale lasiodora	0.11	104	0.56	0.32-0.98
16	*Magnolia grandiflora*	0.11	255	0.55	0.38-0.79
17	*Buxus sempervirens*	0.09	274	0.49	0.34-0.71
18	*Bellis perennis*	0.06	95	0.33	0.15-0.72
19	*Araneus diadematus*	0.06	115	0.32	0.16-0.66
20	*Cynodon dactylon*	0.03	274	0.13	0.06-0.27

*This is group-confined LR, only valid as a comparison between these 20 medicines. CI: Confidence interval; LR: Likelihood ratio

medicines *Allium sativum* and *Formicum acidum*, based on more valid criteria than before. Possibly, headache is a relative contraindication for *Aranea diadema*, *Bellis perennis* and *Cynodon dactylon*, but this should be confirmed by properly designed PFR. This research could also be used to validate the proving methodology.

Conclusion

In this research, data from a former clinical verification programme were re-evaluated from a prognostic point of view. Because of missing data concerning the prevalence of the symptom 'Headache', we could only analyse the prevalence of headache in only 20 of 50 medicine populations.

The validity of this retrospective analysis could also be influenced by confirmation bias and insufficient assessment of the causal relationship between improvement and the prescribed medicine. The 'GCLR' values we found cannot be as such transposed to the condition 'Headache' because other medicines were not prescribed in this programme. For future evaluation of all medicines related to headache, *Allium sativum* and *Formicum acidum* are worth considering.

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Conflicts of interest

None declared.

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पूर्वलक्षण के रूप में विशिष्ट लक्षण के अनुमानित मूल्य की खोजः 20 कम ज्ञात औषधियों में "सिरदर्द" के लक्षण के लिए समूह सीमित संभावना अनुपात (जीसीएलआर) का आकलन

सार

उद्देश्यः 2012–2018 की अवधि के दौरान केंद्रीय होम्योपैथी अनुसंधान परिषद् (सीसीआरएच) द्वारा चिकित्सकीय रूप से सत्यापित 20 से कम ज्ञात उपचारों में 'सिरदर्द' के लक्षण के लिए समूह सीमित संभावना अनुपात (जीसीएलआर) का आकलन।

सामग्री और विधिः परिषद् के औषध प्रमाणन कार्यक्रम को पूरा करने वाली 50 औषधिओं को 6सी, 30सी और 200सी की आरोही पोटेन्सीज में चिकित्सकीय रूप से सत्यापित किया गया। इनमें से, 20 कम ज्ञात औषधिओं का विश्लेषण और 'सिरदर्द' लक्षण के एलआर के लिए किया गया था। सिरदर्द की व्यापकता के अनुसार इन 20 औषधिओं को व्यवस्थित किया और एलआर झ 1 ने एक संकेत दिया कि कौन सी औषधियां दूसरों की तुलना में सिरदर्द से अधिक संबंधित थीं।

परिणामः 4582 रोगियों में, जहां 20 कम ज्ञात औषधियां दी गई थीं में, 'सिरदर्द' के लक्षण को दर्ज किया गया। इन औषधियों में से 8 में एक जीसीएलआरझ 1 है, यह दर्शाता है कि सिरदर्द लक्षण इन औषधीयों को 20 के मूल्यांकन किए गए समूह से बाहर का संकेत दे सकता है। केवल 5 में सांख्यिकीय रूप से महत्वपूर्ण आत्मविश्वास अंतराल (सीआई) था; एलियम सैटिवम, फॉर्मिकम एसिडम, जिमनेमा सिल्वेस्ट्रे, एवेना सैटिवा और पर्सिया एमेरिकाना। इनमें से दो औषधियां, एलियम सैटिवम और फॉर्मिकम एसिडम में उच्चतर समूह सीमित एलआर है।

निष्कर्षः 20 कम ज्ञात होम्योपैथिक दवाओं में से, दो को सिरदर्द के साथ संबंधों के आगे मूल्यांकन के लिए लिया जा सकता है। इन निष्कर्षों की पुष्टि एक बड़ी जनसंख्या में समुचित रूप से व्यवस्थित प्रोटोकोल अनुसन्धान में की जानी चाहिए, जो विशिष्ट दवाओं तक सीमित नहीं है, जो उचित तुलना में सक्षम बनाता है।

Étude de la valeur prédictive des symptômes spécifiques en tant que facteur pronostique: Évaluation du rapport de vraisemblance dans un groupe restreint (RVGR) du symptôme des « maux de tête » de 20 médicaments moins connus

RÉSUMÉ

Objectif: Évaluation du rapport de vraisemblance dans un groupe restreint (RVGR) du symptôme des « maux de tête » de 20 médicaments moins connus et vérifiés cliniquement par le Conseil central pour la Recherche en Homéopathie (CCRH) pendant la période allant de 2012 à 2018.

Matériels et méthodes: 50 médicaments qui ont complété le programme d'essais du conseil ont été cliniquement vérifiés en ordre croissant de dilution de 6C, 30C et de 200C. De ces médicaments, 20 parmi les moins connus ont été analysés pour la prévalence et le rapport de vraisemblance (RV) du symptôme des « maux de tête ». Ils ont été classés en fonction de la prévalence des maux de tête, un RV > 1 indiquant les médicaments qui étaient les plus liés aux maux de tête que d'autres.

Résultats: Le symptôme des maux de tête a été enregistré dans une population de 4582 patients auxquels 20 médicaments moins connus ont été prescrits. Parmi ces médicaments 8 avaient un RVGR >1, montrant ainsi que le symptôme des maux de tête pouvait indiquer l'utilisation de ces 8 médicaments sur le groupe de 20 médicaments évalués. Un intervalle de confiance (IC) statistiquement significatif a été observé pour seulement 5 de ces médicaments: *Allium sativum, Formicum acidum, Gymnema sylvestre, Avena sativa et Persea americana*. Parmi ces 5, deux médicaments, à savoir *Allium sativum* et *Formicum acidum*, ont affiché un rapport de vraisemblance dans un groupe restreint qui était sensiblement plus élevé.

Conclusion: Parmi les 20 médicaments homéopathiques les moins connus, deux peuvent être considérés pour une évaluation approfondie du lien avec les maux de tête. Ces résultats doivent être confirmés par une étude bien organisée du facteur pronostique dans une population plus large et qui n'est pas limitée à des médicaments particuliers afin qu'une vraie comparaison puisse être faite.

Exploración del valor de predicción de síntomas específicos como factor pronóstico: Evaluación de la relación de probabilidades limitada al grupo del síntoma "cefalea" en 20 de los remedios menores

RESUMEN

Objetivo: Evaluación de la GLCR (*group confined likelihood ratio*, relación de probabilidades limitada al grupo) del síntoma "cefalea" de 20 de los remedios menores o menos conocidos, verificados clínicamente en el CCRH (*Central Council forResearch in Homoeopathy*) durante el periodo de 2012 a2018.

Materiales y métodos: Los 50 medicamentos que completaron el programa de patogenesias del Council, se examinaron clínicamente en las potencias ascendentes de 6C, 30C y 200C. Entre estos 50 medicamentos, se analizaron 20 remedios menores en cuanto a la prevalencia y la LR (*likelihood ratio*, relación de probabilidades) del síntoma "cefalea". Estos 20 medicamentos se ordenaron conforme a la prevalencia de cefalea. Una LR>1 daba una indicación de los medicamentos que presentaban una mayor relación con el síntoma de cefalea que los restantes.

Resultados: El síntoma "Cefalea" se registró en una población de 4582 pacientes donde se recetaron 20 medicamentos menos conocidos. Fuera de estos medicamentos, 8 tienen un GCLR> 1, lo que indica que el dolor de cabeza por síntomas podría indicar que estos medicamentos no correspondían al grupo evaluado de 20. Sólo 5 tuvieron un intervalo de confianza (IC) estadísticamente significativo: Allium sativum, Formicum acidum, Gymnema sylvestre, Avena sativa y Persea americana.Dos de estos cinco medicamentos, *Allium sativumy Formicum acidum*, mostraron una GCLR significativamente superior.

Conclusiones: Entre los 20 medicamentos homeopáticos menores, dos pueden considerarse para una posterior evaluación de su relación con la cefalea. Estos hallazgos deben confirmarse en una *Prognostic Factor Research* (Investigación de Factores Pronósticos) adecuadamente organizada que se efectúe en una población mayor sin una limitación a medicamentos específicos, con lo que se podría realizar una comparación adecuada.

Untersuchung des Vorhersagewertes eines bestimmten Symptoms als Prognosefaktor: Bewertung des auf eine Gruppe beschränktenLikelihood-Quotienten (GCLR) für das Symptom "Kopfschmerz" bei 20 weniger bekannten Arzneimitteln

ABSTRAKT

Ziel: Beurteilung des auf eine Gruppe beschränktenLikelihood-Quotienten (GCLR) für das Symptom „Kopfschmerz" von 20 weniger bekannten Mitteln, die vom „Central Council for Research in Homoeopaty" (CCRH) imZeitraum 2012-2018 klinisch geprüft wurden.

Material und Methoden: Die 50 Arzneimittel, die das Arzneimittelprüfungsprogramm des CCRH abschlossen haben, wurden in aufsteigenden Potenzen von C 6, C 30und C 200 klinisch verifiziert. Von diesen wurden 20 weniger bekannte Arzneimittel auf Prävalenz und LR des Symptoms „Kopfschmerz" untersucht. Diese 20 Arzneimittel wurden nach der Prävalenz von Kopfschmerzen geordnet, und LR> 1 gab einen Hinweis darauf, welche Medikamente mehr mit Kopfschmerzen zu tun haben als andere.

Ergebnisse: Das Symptom "Kopfschmerz" wurde bei 4.582 Patienten, denen 20 weniger bekannte Arzneimittel verordnet wurden,erfasst. Von diesen Arzneimitteln hatten acht einen GCLR> 1, was darauf hinweisen könnte, dass sich das Symptom „Kopfschmerz" in der Gruppe der 20 untersuchten Arzneimittel zeigt. Nur fünf hatten ein statistisch signifikantes Konfidenzintervall (KI): Alliumsativum, Acidumformicum, Gymnemasylvestre, Avenasativa und Perseaamericana. Unter den beiden Mitteln Alliumsativum und Acidumformicum, ist die LR-Gruppe signifikant höher.

Schlussfolgerung: Von 20 weniger bekannten homöopathischen Arzneimitteln könnten zwei zur weiteren Beurteilung der Beziehung zu Kopfschmerzen in Betracht gezogen werden. Diese Ergebnisse sollten in einer ordnungsgemäß durchgeführtenStudiezum Prognosefaktor, die nicht auf bestimmte Arzneimittel beschränkt ist und einen richtigen Vergleich ermöglicht, in einer größeren Population bestätigt werden.

探索特定症狀作為預後因素的預測性價值：在20隻較不有名的療劑中，評估「頭痛」症狀的組別限制似然比（GCLR）

摘要

目標：在2012－2018年間，在順勢療法研究中央委員會（CCRH）臨床證實過的20隻較不著名的療劑中，評估「頭痛」症狀的組別限制似然比（GCLR）。

材料和方法：50種已完成委員會驗証計劃的療劑，以遞升層級（6C、30C和200C）作臨床查證。對當中 20種較不有名的療劑，分析「頭痛」症狀的流行性和似然比（LR）。根據頭痛的流行度去將這20種療劑排序，對於LR> 1，會給予標示，以展示哪療劑與頭痛有更大關聯。

結果：於被處方20種較不著名療劑的4,582名病人中有「頭痛」症狀的記錄。在這20種療劑中，8隻療劑GCLR> 1，這顯示在20種療劑中，頭痛這症狀能指引出這些療劑（8隻）。只有5種有統計學上有效的置信區（CI）：大蒜（*Allium sativum*）、甲酸（*Formicumacidum*）、匙羹藤（*Gymnemasylvestre*）、燕麥（*Avena sativa*）和牛油果（*Perseaamericana*）。當中，大蒜（*Allium sativum*）和甲酸（*Formicumacidum*）這兩種療劑有明顯更高的組別限制似然比。

結論：在20種較不著名的順勢療法療劑中，有兩種可被用作進一步研究，以評估它們與頭痛的關係。應於更大的人口中使用適當經組織的「預後因素研究」確認以上發現，可以不限制特定療劑，這將有助恰當比較。