

Health Service Research

Homeopathy in France in 2011–2012 according to reimbursements in the French national health insurance database (SNIIRAM)

Michel Piolot^a, Jean-Paul Fagot^{a,*}, Sébastien Rivière^a,
Anne Fagot-Campagna^a, Gonzague Debeugny^a,
Patrice Couzigou^b and François Alla

^aCaisse nationale de l'assurance maladie, Paris and ^bUniversité Victor Segalen, Bordeaux, France.

*Correspondence to Jean-Paul Fagot, Strategy and Research Department, Caisse nationale de l'assurance maladie, Paris, France; E-mail: jean-paul.fagot@cnamts.fr

Abstract

Background. The use of homeopathic medicine is poorly described and the frequency of combined allopathic and homeopathic prescriptions is unknown.

Objective. To analyse data on medicines, prescribers and patients for homeopathic prescriptions that are reimbursed by French national health insurance.

Methods. The French national health insurance databases (SNIIRAM) were used to analyse prescriptions of reimbursed homeopathic drugs or preparations in the overall French population, during the period July 2011–June 2012.

Results. A total of 6,705,420 patients received at least one reimbursement for a homeopathic preparation during the 12-month period, i.e. 10.2% of the overall population, with a predominance in females (68%) and a peak frequency observed in children aged 0–4 years (18%). About one third of patients had only one reimbursement, and one half of patients had three or more reimbursements. A total of 120,110 healthcare professionals (HCPs) prescribed at least one homeopathic drug or preparation. They represented 43.5% of the overall population of HCPs, nearly 95% of general practitioners, dermatologists and pediatricians, and 75% of midwives. Homeopathy accounted for 5% of the total number of drug units prescribed by HCPs. Allopathic medicines were coprescribed with 55% of homeopathic prescriptions.

Conclusion. Many HCPs occasionally prescribe reimbursed homeopathic preparations, representing however a small percentage of reimbursements compared to allopathic medicines. About 10% of the French population, particularly young children and women, received at least one homeopathic preparation during the year. In more than one half of cases, reimbursed homeopathic preparations are prescribed in combination with allopathic medicines.

Key words: Allopathy, database, drug utilization, health insurance, homeopathy, SNIIRAM.

Introduction

Homeopathy is widely used in France since its first description by Samuel Hahnemann in the late 18th century, although various publications have discussed its effectiveness as well as toxicity with

conflicting conclusions [1–6]. A 'Homeopathic preparations' monograph was introduced in the French Pharmacopoeia in 1965, but these homeopathic preparations have never been subject to the regulatory and efficacy and safety requirements of allopathic medicines. The *Haute Autorité de Santé* transparency commission was unable

to evaluate the medical service provided by homeopathy due to the absence of clearly defined therapeutic indications for homeopathy, but maintained reimbursement. Nevertheless, the reimbursement rate was decreased from 65% to 35% at the end of 2003 [7], and is currently 30% since May 2011.

Yet the prevalence of homeopathy use in France is not precisely known, particularly the use of reimbursed homeopathy compared to the over-the-counter homeopathic medicines. A survey conducted in January 2012 reported that 77% of the French population trusted homeopathy, 56% had used a homeopathic preparation at least once, and 36% were regular users [8]. However, this study did not quantify the self-medication rate or the respective proportions of the two categories of homeopathic preparations: non-reimbursed products with a therapeutic indication, a daily dose and a patient package leaflet, and homeopathic preparations that are reimbursed with a medical prescription, prescribed according to common name (tubes of granules, pellets), but without a package leaflet. The therapeutic indications for reimbursed homeopathic preparations are in fact determined by the prescriber according to the patient's symptoms and characteristics. Regarding these reimbursed medicines as for all refunds related to health insurance, the French national health insurance database enables to undertake a specific study at a national level. Such studies are increasingly needed by national health insurance and regulatory authorities for a better control of expenditure and improvements in efficiency, and to give accurate information to prescribers and patients as well. Moreover, data on homeopathy use in a European state may be of interest for other countries, whether this complementary medicine is reimbursed or not.

There were several questions for health insurance about the use of reimbursed homeopathy in France, especially about homeopathy users and homeopathy prescribers. The present study was designed to clarify the proportion of French people using homeopathic medications, the age distribution of users and the degree of chronicity of use. Another important issue was whether homeopathy prescribers were mainly general practitioners specialized in homeopathy or not, and what were specialties of the other prescribers of these drugs and the share of homeopathy in their overall prescriptions. This study was also designed to evaluate the frequency of allopathic prescription associated with reimbursed homeopathic prescription.

Methods

Data sources

The SNIIRAM (Système National d'Information Inter-Régimes de l'Assurance Maladie) records individual data that are anonymized, excluding any risk of identification. Since 2004, they represent all reimbursements by French national health insurance [9]. Individual data are available for the three previous years plus the current year, and include age, gender, city of residence, information on 100%-reimbursed severe and costly chronic diseases, vital status (date of death), date of prescription, and the prescriber's type of practice (public or private) and specialty.

Study population

French national health insurance is composed of several specific schemes covering the whole French population, i.e. 65.8 million inhabitants on 1st January 2013 [10]. The general scheme for salaried workers (CNAMTS) covers all French employees—including civil servants—and students, and accounts for approximately 87% of the population. The National Health Insurance Fund for Agricultural Workers and Farmers (MSA) and the self-employed

national health insurance fund (RSI) cover approximately 11% of the population, and 12 additional specific schemes cover the remaining 3% of the population. The source population of this study comprised all beneficiaries and their families covered by the various health insurance schemes.

Analyses

The study period comprised the 12-month period from July 2011 to June 2012. By definition, this study did not take into account non-reimbursed homeopathy. All forms, pack sizes and dose strengths of reimbursed medications are precisely identified in the SNIIRAM by a specific 7-digit number (CIP). We identified specific codes for homeopathic preparations, i.e. mainly those ranging from 0000000 to 1999999 and 8500000 to 8999999 and 196 other codes indicated on the list of reimbursed medicinal products. We used these codes to identify the various 'stocks' (i.e. substances of vegetable, animal or mineral origin) and dilutions of the mother tincture (extract of the original substance) generally expressed as the centesimal (C) scale. We also identified more complex homeopathic compounds specifically prepared for a given patient over the same period, but their composition was not available in the SNIIRAM database. We also recorded the type of prescriber, the type of practice (private or public) and the physician's specialty, together with the costs associated with each homeopathic preparation.

The population with at least one reimbursement for a homeopathic preparation during the study period was described (age and gender). We also analysed the occupation and specialty of the prescribers, together with the contents of homeopathic prescriptions and their monthly variations over the study period. We evaluated the share of homeopathic preparations in the total number of prescriptions by dividing the number of homeopathic units by the total number of allopathic and homeopathic units. We calculated a homeopathy prescription rate in the population by dividing the number of homeopathy users by the total population in each age group [11]. We calculated a homeopathy prescription rate for each occupation and physician's specialty, by dividing the number of homeopathy prescribers by the total number of active prescribers in 2012 [12]. We also analysed coprescription of allopathic medicines together with homeopathic preparations on the same prescription for the month of October 2011, for each consultation, i.e. for the same prescriber, the same patient and the same prescription date.

As this study was based on comprehensive reimbursement data for the French population and not only on a sample, the results are presented without calculation of confidence intervals.

All analyses were performed with SAS Enterprise Guide 4.3 software.

Results

Description of homeopathic medicines

A total of almost 118,303,100 homeopathy units were reimbursed by French national health insurance during the study period, corresponding to 18,106 different preparations, mainly multidose tubes of granules and single-dose tubes of pellets. The homeopathic preparation could not be identified for 2.8% of units (about 3.4 million units). Homeopathic compounds and 'single medicines' (i.e. specific dilutions of a single homeopathic stock) represented 1,946,713 and 598,248 prescriptions, respectively, i.e. 4.6% of all homeopathic prescriptions. Homeopathy accounted for 5.0% of the total number of drug units prescribed by healthcare professionals (HCPs). The cost of all homeopathic treatments prescribed during the 12-month period

was approximately €279 million (retail price). The observed mean reimbursement rate was 34%. This cost corresponded to nearly €98 million for French national health insurance.

The total number of reimbursed units represented more than 100,000 packs for 153 stocks, regardless of the presentation (i.e. without taking dilutions into account). The most commonly prescribed stock was 'Arnica montana' (analgesic and anti-inflammatory drug) (Table 1), followed by 'Influenzinum' (flu treatment), 'Ignatia amara' and 'Gelsemium sempervirens' (mainly anxiolytic properties). Concerning the dates of prescription, the highest homeopathic preparation prescription rates were observed in autumn and winter with a maximum of 11.916 million units reimbursed in October and at least 7.137 million units reimbursed in August (Fig. 1).

Description of the population

During the 12-month period, 6,705,420 beneficiaries received at least one reimbursement for a homeopathic preparation or compound, i.e. 10.2% of the French population [10]. This population was predominantly female (68.2%), with a higher median age than that of the male population (45 vs 29 years) as well as mean (43 vs 33 years, standard deviation 24 vs 27 years). First and third quartile ages were 24 and 62 years, respectively, for females vs 7 and 57 years for males.

The proportion of beneficiaries using homeopathy varied according to age: the highest rate (18.1%) was observed for children aged 0–4 years, and decreased to 6.6% for 20–24-year-old patients and then increased in older age groups, without exceeding 12.2%.

Table 1. Homeopathic stocks for which more than 1,000,000 units are reimbursed per year (Source: SNIIRAM, all health insurance schemes, July 2011–June 2012)

Stock	Number of packs	% of overall homeopathy (N = 118,303,069)
Arnica montana	6,212,150	5.3
Influenzinum	5,532,910	4.7
Ignatia amara	4,745,443	4.0
Gelsemium sempervirens	3,733,055	3.2
Hamamelis virginiana	3,665,098	3.1
Passiflora	3,375,652	2.9
Nux vomica	3,094,064	2.6
Thuya occidentalis	2,763,026	2.3
Lachesis mutus	2,438,857	2.1
Sepia officinalis	2,213,213	1.9
Serum de yersin	2,210,440	1.9
Rhus toxicodendron	2,125,875	1.8
Silicea	1,848,109	1.6
Lycopodium clavatum	1,797,609	1.5
Sulfur	1,725,371	1.5
Pulsatilla nigricans	1,673,777	1.4
Arsenicum album	1,650,252	1.4
Staphysagria	1,632,089	1.4
Natrum muriaticum	1,589,895	1.3
Belladonna	1,407,123	1.2
Argentum nitricum	1,345,820	1.1
Calcarea carbonica	1,330,787	1.1
Cuprum metallicum	1,314,898	1.1
Phosphorus	1,311,505	1.1
Bryonia	1,205,561	1.0
Poumon histamine	1,173,145	1.0
Apis mellifica	1,085,477	0.9
Ipeca	1,000,425	0.8

Except during childhood, this rate was also dependent on gender: a much higher rate was observed in the female population, from 9.7% at the ages of 10–24 years to a maximum of 16.2% between 70 and 74 years, while the rate increased moderately with age in men, with a minimum of 3.4% but always less than 8% (Fig. 2).

The mean number of reimbursements for beneficiaries using homeopathy was 8 with a median of 3 reimbursements over the 12-month study period (Supplementary Fig. S1). One reimbursement only was observed in 30.4% of beneficiaries, and 54% of beneficiaries received three or more reimbursements. The number of reimbursements was greater than or equal to 20 for 10% of beneficiaries, and 78 or more for 1% of beneficiaries ($n=67,536$). The population with at least three reimbursements for homeopathic preparations ($n=3,592,716$) was predominantly female (71%) and slightly older, with a median age of 48 years for females.

Description of prescribers

A total of 120,110 different HCPs who had prescribed a reimbursed homeopathic preparation at least once to one of their patients during the year were identified, corresponding to 43% of about 276,300 physicians, midwives and dentists who were potential prescribers of medicines in 2012 [12].

Active prescribers accounted for 84% of all prescribers, including full-time hospital prescribers who accounted for only 0.72%. Retired prescribers accounted for 15.1%. General practitioners accounted for 58% ($n=58,543$) of the 101,180 active HCPs who prescribed homeopathic preparations, followed by dentists (10.7%), ophthalmologists (3.4%), dermatologists (3%), midwives (2.8%), gynecologists-obstetricians (2.7%) and pediatricians (2.5%). More than nine out of 10 of all GPs (95%), pediatricians (92%), dermatologists (92%) and medical gynecologists (93%) had prescribed a homeopathic preparation at least once during the year. These proportions were slightly lower for midwives (75%), ophthalmologists (72%) and dentists (31%) (Table 2).

Only 6.3% of homeopathy prescribers (approximately 6,600) were registered as 'special practitioners' with French national health insurance, i.e. practising a special form of medicine not recognized as a medical specialty, most commonly homeopathy (1,600 cases), followed by acupuncture (1,500 cases) and vascular medicine (1,200 cases).

The three homeopathic stocks most commonly reimbursed were generally prescribed by most prescribers, regardless of their specialty. However, more specific prescriptions were observed for pediatricians (Chamomilla vulgaris, Ipeca, Arnica montana, Influenzinum and Thuya occidentalis), dermatologists (Thuya occidentalis, Arnica montana and Antimonium crudum) and midwives (Arnica montana, Actea racemosa, Gelsemium sempervirens and Caulophyllum thalictroides). Some HCPs (44%) had prescribed homeopathic preparations as well as homeopathic compounds and 'single medicines', while others (54%) had only prescribed homeopathic preparations, and a minority (2%) had only prescribed homeopathic compounds.

The proportion of homeopathy prescriptions with respect to all (allopathic and homeopathic) prescriptions by active prescribers (approximately 105,400) was very low, accounting for an average of 7% of all prescriptions with a median of 1% (Supplementary Fig. S2). This proportion was less than 16% of all prescriptions for 90% of homeopathy prescribers, 47% for 5% of homeopathy prescribers, and higher than 91% for only 1% of homeopathy prescribers.

Homeopathy prescriptions represented at least 50% of all prescriptions for 5,042 prescribers. Some of these prescribers had a high allopathic and homeopathic prescription activity, i.e. more than

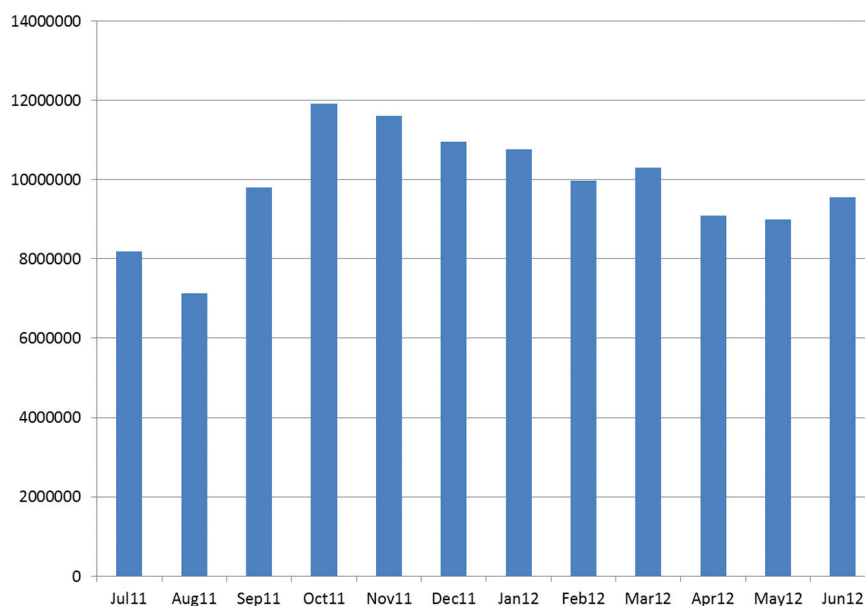


Figure 1. Monthly distribution of reimbursed homeopathy units. (Source: SNIIRAM, all health insurance schemes, July 2011–June 2012).

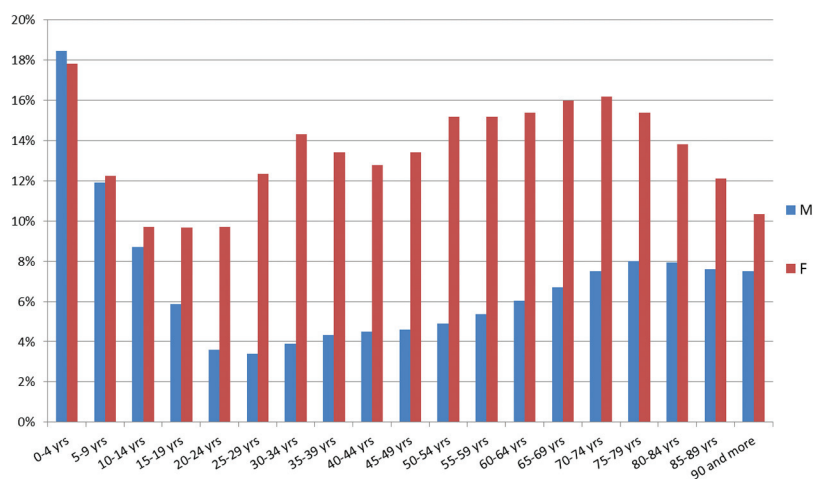


Figure 2. Rates (%) of reimbursed homeopathy use by gender and age. (Source: SNIIRAM, all health insurance schemes, July 2011–June 2012).

100,000 units (Fig. 3). Only one third of these prescribers (1,700) were GPs with an alternative medicine practice, with a large majority of homeopathy (56%) or acupuncture (35%) practitioners and 6% of vascular medicine practitioners. Over the 12-month study period, these GPs prescribed an average of 26,554 packs of allopathic and homeopathic medicines, i.e. 85% of the average number of prescriptions by GPs (31,100).

Analysis of non-homeopathic coprescriptions

In October 2011, more than 1,591,400 consultations (combination of a prescriber, a beneficiary and a prescription date) led to the prescription of a homeopathic preparation, with concomitant prescription of homeopathic and allopathic medicines in more than 869,900 cases (55%). Allopathic medicines with low or moderate demonstrated efficacy, according to the French health technology assessment agency (with 15–35% reimbursement rates, respectively) accounted for 31% of all units prescribed. Allopathic medicines with high efficacy (65% reimbursement rate) primarily consisted of analgesics and anti-inflammatory drugs, followed by drugs for specific organs or symptoms such as anxiolytics, hypnotics, antiulcer drugs,

hormones, vitamins, antiplatelet agents, antibiotics, drugs for diabetes mellitus or diuretics (Table 3).

Discussion

This first analysis of the homeopathic preparations reimbursed in France over a 12-month period describes the patients who use homeopathic preparations, even occasionally. This population represents about 7 million people, i.e. more than 10% of the French population, particularly young children and women. This study also describes the HCPs who prescribe homeopathic preparations, even if very occasionally, i.e. almost 95% of GPs and pediatricians. It also identifies the types of homeopathic preparations used, predominantly comprising certain specific stocks, coprescriptions with allopathic medicines documented in more than one half of cases, and the seasonal variations of these prescriptions with a declining peak between October and January.

Nevertheless, this study is limited to reimbursed preparations and cannot take into account homeopathic preparations used without prescription. Self-medication mainly concerns over-the-counter

Table 2. Total numbers of active French healthcare professionals prescribing homeopathic and allopathic medicines, and percentages in each specialty of those who prescribed at least one homeopathic preparation (Source: SNIIRAM, all health insurance schemes, July 2011–June 2012)

Specialty	Total numbers of French homeopathy or allopathy prescribers ^a (N = 276,289)	Homeopathy prescribers (N = 104,679)	Percentage of homeopathy prescribers in each specialty
General practitioners	61,919	58,543	94.5
Gynecologists	1,595	1,482	92.9
Dermatologists	3,245	3,001	92.5
Pediatricians	2,723	2,509	92.1
Obstetricians	3,602	2,771	76.9
Otolaryngologists	2,262	1,692	74.8
Midwives	3,746	2,797	74.7
Rheumatologists	1,825	1,334	73.1
Ophthalmologists	4,802	3,467	72.2
Gastroenterologists	2,151	1,160	53.9
Psychiatrists	6,144	2,614	42.5
Cardiologists	4,575	1,652	36.1
Radiologists	5,424	1,798	33.1
Dentists	34,909	10,869	31.1
Others	137,367	32,688	23.8

^aActive prescribers according to INSEE 2012 data [12].

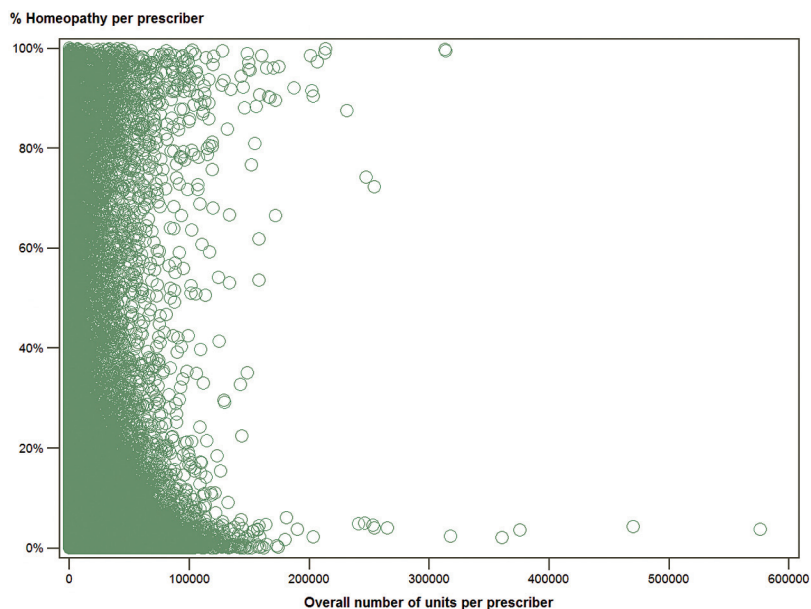


Figure 3. Rates (%) of reimbursed homeopathic preparations per prescriber relative to overall number of reimbursed homeopathic and allopathic prescriptions per prescriber. (Source: SNIIRAM, all health insurance schemes, July 2011–June 2012).

products, especially for cold and flu and anxiety. These products accounted for 48% of the 2012 sales of Boiron Laboratories, specialized in homeopathy [13]. A recent survey also reported that 36% of the population used homeopathy. Our estimate is only 10%, which is at least partly due to the fact that our study was exclusively based on reimbursed medicines over a limited 12-month period.

Although the proportion of the population that received a reimbursement for homeopathy appears to be considerable, such reimbursements are uncommon, as they were limited to an average of eight reimbursements over the 12-month study period. If chronic treatment is defined by at least three reimbursements during the year of any homeopathic medicine, only half of these patients, i.e. 5.5% of the French population, can be considered to receive chronic treatment. This small proportion of reimbursed homeopathic

prescriptions has already been highlighted in a previous study from French national health insurance conducted in 1993 on a sample of almost 126,000 prescriptions, in which homeopathy accounted for 6.3% of all prescriptions [14].

This study shows that many HCPs prescribe homeopathy at least once a year, i.e. nearly 95% of GPs, dermatologists and pediatricians, and 75% of gynecologists-obstetricians and midwives. This may be due, at least for GPs, to the fact that they meet most of patients with undetermined symptoms or benign conditions, which are probably often indications for homeopathic preparations. GPs are the main prescribers, followed by dentists, ophthalmologists and dermatologists, ahead of pediatricians and gynecologists, who were the leading homeopathy prescribers in the 1993 study [14]. However, homeopathy generally represents a very small proportion

Table 3. Distribution of reimbursed allopathic medicines most commonly coprescribed with homeopathic preparations in October 2011 (Source: SNIIRAM, all health insurance schemes, July 2011–June 2012)

Active substance	Number of packs
Paracetamol	975,531
Colecalciferol	140,532
Levothyroxine	77,312
Acetylsalicylic acid	73,842
Ibuprofen	65,101
Tramadol/paracetamol	61,882
Amoxicillin	56,244
Codeine/paracetamol	53,247
Zolpidem	44,587
Esomeprazole	35,583
Calcium/colecalciferol	35,290
Omeprazole	34,453
Metformin	32,930
Betamethasone	29,749
Alprazolam	29,131
Bromazepam	26,498
Furosemide	26,277
Zopiclone	26,237
Amoxicillin/clavulanic acid	24,476
Cefpodoxime	23,127
Atorvastatin	22,756
Prednisolone	22,617
Rosuvastatin	22,414

of the clinical practice of these prescribers, and is often only very occasional, as only 5,000 HCPs—midwives, GPs and dentists—prescribe more homeopathic medicines than allopathic medicines. GPs who predominantly prescribe homeopathic preparations appear to prescribe less medicines in general, with an average of 26,600 units per year. The ‘homeopathy’ alternative medicine practice used by health insurance appears to be of limited value, as it is generally not indicated and therefore cannot be used only to identify homeopathy prescribers.

Almost 55% of prescriptions comprised both homeopathic and allopathic medicines, indicating that the prescriber was unable to confine his/her prescription to homeopathic medicine to treat the patient. In the absence of an approved indication for these treatments, as homeopathic prescription is strongly related to the patient and not simply the patient’s symptoms, it is impossible to assess the proportion of prescriptions in which homeopathic medicine and allopathic medicine share the same indications, essentially corresponding to symptomatic allopathic treatments, for example, analgesic and hypnotic drugs, but also treatments for chronic diseases such as diabetes mellitus. Coprescription of anti-inflammatory drugs or anxiolytics/sedatives with homeopathic preparations containing Arnica or Passiflora, respectively, may suggest possible shared indications, but this cannot be confirmed in the absence of diagnostic information in the national health insurance databases. Considering also the non-comparative design of this study, it is therefore not possible to evaluate whether a homeopathic prescription can avoid the need for an allopathic prescription.

Over the 12-month study period, the total cost of prescribed homeopathy was approximately €279 million with a reimbursement cost of €98 million, and an out-of-pocket expenditure of €187 million. This cost to national health insurance of €98 million must obviously be compared to the global medicine expenditure of €34.4

billion in France in 2010 [15] as it represents only 0.3% of this expenditure, and the cost of the most commonly prescribed drugs; for example, in 2013, the leading paracetamol product (Doliprane®) was the fourth leading reimbursed medicine, representing a total cost of €315 million [16].

The effectiveness of homeopathic preparations is still being debated, and at least two important meta-analyses had conflicting conclusions [1,2]. The issue of safety has also been subject to publications and controversies [6]. Based on national health insurance data, with their known limitations, this study does not claim to question the role of homeopathy or its reimbursement, but was simply designed to provide a better knowledge of the homeopathic preparations prescribed, the population using reimbursed homeopathic preparations and the HCPs who prescribe these preparations, aspects that have rarely been investigated before now.

Conclusion

This study showed that many HCPs prescribe reimbursed homeopathic preparations at least once a year, but generally in combination with allopathic medicines and often very occasionally. Patients treated by homeopathic preparations represent 10% of all patients, and often use these products very occasionally. Overall, reimbursed homeopathy is rarely prescribed compared to the prescription of all medicines.

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Declaration

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Conflict of interest: none.

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