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ORIGINAL PAPER

Homeopathic treatment of patients with influenza-like illness during the 2009 A/H1N1 influenza pandemic in India

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Introduction: **We conducted a prospective, multi-centre, data collection survey of homeopathic practice in treatment of influenza-like illness in India during the 2009 pandemic of A/H1N1 influenza ('swine flu', SF).**
Aims: **To survey the practice of homeopathic practitioners in India in the management of SF, with respect to: (a) patients' symptoms at presentation and at follow-up (FU) consultation; (b) homeopathic medicines prescribed.**
Methods: **Data collection took place from October 2009 to February 2010, at the peak of the pandemic. All patients satisfying the minimum diagnostic symptoms of SF were eligible for inclusion. Data per appointment (in person or by telephone) were recorded by practitioners in spreadsheet format. All records were anonymised and included: whether patient was immunised against A/H1N1; influenza symptoms at consultation; the homeopathic medicine/s prescribed; whether antiviral medicine prescribed.**
Results: **Twenty-three homeopathic physicians contributed to data collection. At the first appointment, 1126 patients had valid SF symptoms. A total of 89 different combinations of SF symptoms was observed, the most common being temperature >38°C + cough + runny nose (*n* = 170; 15.1%). A total of 44 different remedies (or combinations of remedies) were used at these first appointments, the most frequently prescribed being *Arsenicum album* (*n* = 265; 23.5%). For a total of 99 FU appointments with valid SF symptoms, *Arsenicum album* was prescribed most frequently overall (*n* = 28; 28.0%).**
Conclusions: **In our sample, the 2009 A/H1N1 influenza pandemic in India was characterised by several prominent symptoms and symptom/medicine associations, particularly temperature >38°C + cough + runny nose, associated with *Arsenicum album*. Future studies should collect additional keynote prescribing symptoms that influence the choice of homeopathic medicine.** *Homeopathy* (2013) **102**, 187–192.

Keywords: Homeopathy; 2009 A/H1N1; swine flu; influenza-like illness; pandemic; data collection survey; India

Introduction

In late April 2009, a novel variant of swine influenza virus A/H1N1, with rapid person-to-person transmission, appeared and spread rapidly. On 29 April that year, the World Health Organization (WHO) raised the influenza pandemic

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alert to phase 5, signalling that a pandemic was imminent and, on 11 June 2009, declared the pandemic of what came to be known as 'swine flu' (SF). Testing ultimately revealed that the 2009 A/H1N1 virus was a 'quadruple reassortant' virus with gene segments originating from North American swine and avian influenza virus, a human influenza virus, and two segments from viruses normally found in swine in Asia and Europe. Available vaccines were not protective.[1]

Homeopathy had been used, with apparent success, in influenza pandemics such as those of 1918 ('Spanish' flu),[2] 1951[3] and 1957 ('Asian' flu),[4] but there are no recent data. In India, homeopathy is popular and widely used, patients with acute day-to-day medical problems often consulting homeopaths both in the Governmental and in the private sector. Currently in India, there is a total of over 200,000 registered university-qualified homeopathic practitioners[5] and, on popular demand, about 7000 homeopathic clinics are established in the Government's primary health centres.[6] A study by Manchanda and Kulashreshtha[7] revealed that the most frequent consultations (22%) for homeopathic treatment in primary healthcare were for respiratory tract complaints (ICD 9: 460−519), including influenza-like illness (ILI).

During 2009−10, India was affected by the A/H1N1 influenza pandemic. Surveying the use of homeopathy internationally in epidemic or pandemic influenza is one *raison d'être* of the International Scientific Committee for Homeopathic Investigations (ISCHI). In the Indian context of rapidly increasing numbers of cases of SF, therefore, ISCHI established a multi-centre, prospective, data collection survey of the routine practice of primary-care homeopathic practitioners in the treatment of ILI symptoms, suggestive of SF.

Study aim

To survey the practice of a volunteer group of homeopathically qualified practitioners in India in the primary-care management of symptoms of 2009 A/H1N1 influenza and ILI and their associated complications, with respect to: (a) patients' symptoms at presentation and at follow-up (FU) consultation; (b) the homeopathic medicines prescribed.

Methods

Study period & participants

The Central Council for Research in Homeopathy (CCRH) recruited practicing homeopathic physicians from regions where diagnosed cases of 2009 A/H1N1 influenza were being reported. Practitioners were eligible to take part if they worked in primary medical care and held a legally recognised qualification in homeopathy in India; the national organisers in India (CN, RKM) were responsible for ensuring that these eligibility criteria were met. Practitioners were not paid for their input; their names are listed in Acknowledgements.

Data collection began on 1 October 2009. It was intended that the project would run continuously to 31 March 2010, the period of the expected resurgence of the 2009 A/H1N1 pandemic in the northern hemisphere. During this period, the pandemic was at its peak in India.[8] However, the pandemic diminished markedly in much of the northern hemisphere, including India, during January 2010;[7] data collection was therefore discontinued on 28 February 2010.

Patients

All patients satisfying the accepted symptoms of 2009 A/H1N1 influenza (on the day of consultation or in the most recent 5 days) were eligible for data collection.

Inclusion criteria

The following symptoms were defined as the minimum diagnostic criteria for ILI:

Sudden fever >38°C (100.4 F) and two or more of the following:

- New cough
- Headache
- Sore throat
- Limb or joint pain
- Runny nose
- Extreme tiredness
- Diarrhoea or vomiting.

Data

Data per appointment (in person or by telephone) were recorded by the practitioner on a dedicated *Excel* spreadsheet (designed by ESB). Each record (one row per consecutive consultation) comprised data under the following column headings:

- Consecutive row number
- Consultation date
- Telephone or in-person consultation
- Whether new or FU consultation for flu or its complications
- Unique patient identification (*anonymised except to practitioner*)
- Patient's age
- Presence of serious underlying disease or condition
- Whether patient immunised for 2009 A/H1N1. If yes, date
- Date of onset of flu symptoms
- Whether laboratory-confirmed 2009 A/H1N1
- Flu symptoms at this consultation
- Homeopathic medicine/s prescribed at this consultation
- Whether antiviral medicine (e.g. oseltamivir) prescribed
- Whether other conventional medicine/s prescribed.

For post-influenza complications only:

- Complications of flu at this consultation
- Time since original flu symptoms resolved.

Practitioners were encouraged, but were not required, to obtain and record follow-up information from each patient they treated. Normal practice procedures were always retained. Under these circumstances, research ethics approval

was not required. Nevertheless, prior approval from the Health Ministry, Government of India, was obtained for collecting data from the participating clinics.

Project organisation

The study was coordinated by one of us (RTM). It was undertaken as part of a multi-national ISCHI survey on 2009 A/H1N1 influenza and A/H1N1-like influenza. The national organisers in India (CN, RKM) were in direct receipt of spreadsheets from each of the contributing practitioners. The national findings from India are reported here.[a] The identity of the data arising from any individual patient remained anonymous to all except the original practitioner concerned; the identity of any given practitioner was anonmous to all except the national organisers in India.

Results

Thirty-two licensed homeopathic physicians participated in this survey: 24 were from Governmental dispensaries and eight were from the private sector. Of these 32 physicians, 23 actively contributed to data collection. All physicians were working in urban areas, approximately one half of them in New Delhi. The mean professional experience of the contributing physicians was 19.7 (SD, 12.9) years (range 3–38 years). The homeopathic physicians graduated from colleges in different regions of India: of 23 physicians, 10 obtained their degrees from colleges of northern, six from eastern, four from western and three from southern India. The locations of their original colleges mirrored that of their homeopathic practices during the data collection.

The data analyst (ESB) received, by email from CN, a completed spreadsheet comprising data from each of 23 of the 32 practitioners who had agreed to contribute to the project. The shortfall in participating numbers was not due to non-availability of clinical cases but to inability of some practitioners to use the *Excel* spreadsheet format and/or to devote time to enter data. After receipt, the data were cleaned and organised in communication with the national organiser as necessary. The results were then analysed and summarised in pivot-table format, from which the following results were obtained:

The total number of appointments recorded was 1676. 1192 were first appointments and 484 were FU appointments (Table 1).

Figure 1 displays the flow of patients through consecutive FU appointments. To clarify the analysis focus at each stage, the patients were divided at every appointment into those who met the minimum diagnostic criteria (valid SF symptoms) and those who did not ('non-valid SF' symptoms). At the first appointment, 1126 patients had valid SF symptoms, whilst 66 had non-valid SF symptoms. Figure 1 illustrates these numbers up to the final FU appointment; the flowchart shows also that 41 patients were not analysed at any stage during FU due to having presented with insufficient diagnostic criteria for SF at the first appointment.

[a] Findings from other countries (Belgium, France and UK, which also participated in this same ISCHI initiative) are not reported because of the very small numbers of cases recruited.

Table 1 All cases recorded during data collection in India

	All appmts.	*First appmts.*	*FU appmts.*
No. appmts.	1676	1192	484
No. patients*	1192	1192	320
Immunised†	0%	0%	0%
Most freq. remedy	*Arsenicum* – 20.5%	*Arsenicum* – 22.7%	*Sac lac* – *21.5%*
Lab confirmed cases	0.18%	0.17%	0.21%
Antiviral used	1.19%	1.43%	0.62%

[appmts. = appointments].
* 228 Patients each had one FU; 47 had two FUs; 25 had three FUs; 13 had four FUs; 7 had five FUs.
† 13 Records were missing; the rest were 'No' to the question of immunisation.

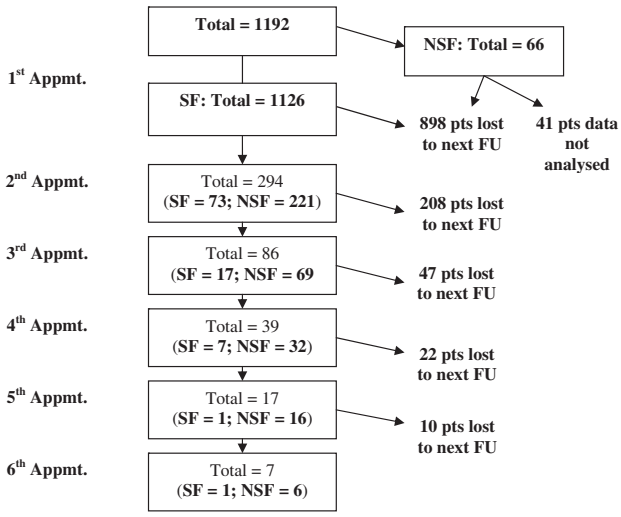
There was no uptake of immunisation in entered patients. Antiviral medication was used in 1.19% of cases (1.43% at first appointments, 0.62% at FU appointments) and laboratory confirmation in only 0.18% of all cases (0.17% at first appointments, 0.21% at FU appointments) – see Table 1.

Arsenicum album was the most frequently prescribed remedy across all cases and for first appointments (20.5% and 22.7% respectively), with *Sac lac* (lactose) being prescribed the most at FU appointments (21.5%) – see Table 1 for details.

First appointments

1569 Appointments satisfied the minimum criteria for valid SF symptoms, and of these 1126 were first appointments (Table 2).

Antiviral medication was used in 1.34% of cases and laboratory confirmation was available in 0.19% of cases. *Arsenicum album* was the most frequently prescribed remedy (23.5% of cases). See Table 2 for details.



Note: 41 patients not analysed at FU due to invalid first appmt., as shown above

Figure 1 Number of patients (pts) at first appointment (appmt.) and at FU [SF = valid 'swine flu' symptoms, NSF = non-valid 'swine flu' symptoms].

Table 2 Valid cases of SF – i.e. those with symptoms satisfying minimum criteria at first appointment

	All appmts.	*First appmts.*	*FU appmts.*
No. appmts.	1569	1126	443
No. patients*	1126	1126	294
Immunised	0%	0%	0%
Most freq. remedy	*Arsenicum* – 21.5%	*Arsenicum* – 23.5%	*Sac Lac* – 21.9%
Lab confirmed cases	0.19%	0.19%	0.23%
Antiviral used	1.15%	1.34%	0.67%

[appmts. = appointments].
* 208 Patients each had one FU; 47 had two FUs; 22 had three FUs; 10 had 4 FUs; 7 had 5 FUs.

At these 1126 valid SF first appointments, a total of 89 different combinations of SF symptoms was observed. The most common combination was temperature >38°C + cough + runny nose (n = 170; 15.1%) – see Table 3.

A total of 44 different remedies (or combinations of remedies) was prescribed at these first appointments. The most frequently prescribed was *Arsenicum album* (n = 265; 23.5%), followed in frequency by: *Bryonia* (n = 160), *Belladonna* (n = 119), *Rhus tox* (n = 84) and *Pulsatilla* (n = 53) – see Table 4.

There was one case each of bronchitis and myalgia as complications of SF.

For the 66 patients with non-valid SF symptoms at first appointment, the most frequently observed sets of symptoms were: temperature >38°C + limb or joint pain; temperature >38°C + cough; temperature >38°C + extreme tiredness; cough + sore throat (data not shown).

A graph displaying the most frequently prescribed remedies against the most frequent SF symptoms can be found in Figure 2.

FU appointments

There was a total of 484 FU appointments comprising 294 second appointments, 86 third appointments, 39 fourth appointments, 17 fifth appointments and 7 sixth appointments, plus the 41 appointments not analysed (see above).

For these 484 FU appointments, there were 99 in which valid SF symptoms were observed. A total of 44 different combinations of such symptoms was recorded, the most frequent (n = 7) being temperature >38°C + cough + runny nose – see Table 5.

These 99 valid FU appointments for SF comprised 73 second appointments, 17 third appointments, 7 fourth appointments, 1 fifth appointment and 1 sixth appointment (see also Table 1).

Table 3 Top 5 most frequently reported combinations of SF symptoms for 1126 first appointments

'Swine flu' symptoms	*Frequency*
Temp >38°C, cough, runny nose	170
Temp >38°C, cough, headache	63
Temp >38°C, cough, headache, runny nose	59
Temp >38°C, cough, limb or joint pain	42
Temp >38°C, headache, sore throat	41

Table 4 Top 10 most frequently reported remedies for 1126 SF patients at first appointment

Remedy	*Frequency*
Arsenicum album	265
Bryonia	160
Belladonna	119
Rhus tox	84
Pulsatilla	53
Hepar sulph	44
Gelsemium	44
Dulcamara	40
Eupatorium	35
Influenzinum	31

Arsenicum album was prescribed most frequently (n = 28; 28.0%). The extent to which the first-prescribed remedy was continued to the second prescription is shown in Table 6. The mean time intervals between appointments are shown in Table 7.

From the total, just three patients had viral confirmation. One of these patients was prescribed *Gelsemium* then *Arsenicum album*. The other two patients had only one appointment each and were prescribed *Arsenicum album* in one case and *Belladonna* in the other.

Because of the large loss to FU, with only 73 (6.5%) patients out of 1126 with retained SF symptoms returning for at least a second appointment, it was not deemed appropriate to analyse these data further.

Discussion

During the 2009–10 pandemic, some 202,790 persons were investigated for 2009 A/H1N1 influenza in Governmental and private laboratories across India and 46,131 (22.8%) were found positive: 2728 deaths were attributed to influenza in India between May 2009 and December 2010.[9] According to a survey in Pune, among suspected cases of influenza attending outpatient departments, 18.2% were positive for 2009 A/H1N1 influenza[10]. The CCRH identified *Arsenicum album* as a prophylactic genus epidemicus for this pandemic.[11] That information was widely circulated among homeopathic institutions.

In this data collection project, we demonstrated that it was possible to collect a substantial amount of treatment-related patient data in India during an influenza epidemic, even when reporting was done on a voluntary basis. The study identified the most commonly treated symptoms (temperature >38°C + cough + runny nose). Due to the nature of the disease and low viral-confirmation statistics, it is not possible to be certain that these symptoms were cases of true 'swine flu': they are common symptoms in other upper respiratory tract infections. Our inclusion criteria required fever plus two additional symptoms. In October 2009 (after our study was underway), the US Centers for Disease Control and Prevention published a triage algorithm for adults with ILI that required only fever or feverishness, plus cough or sore throat, for a presumptive

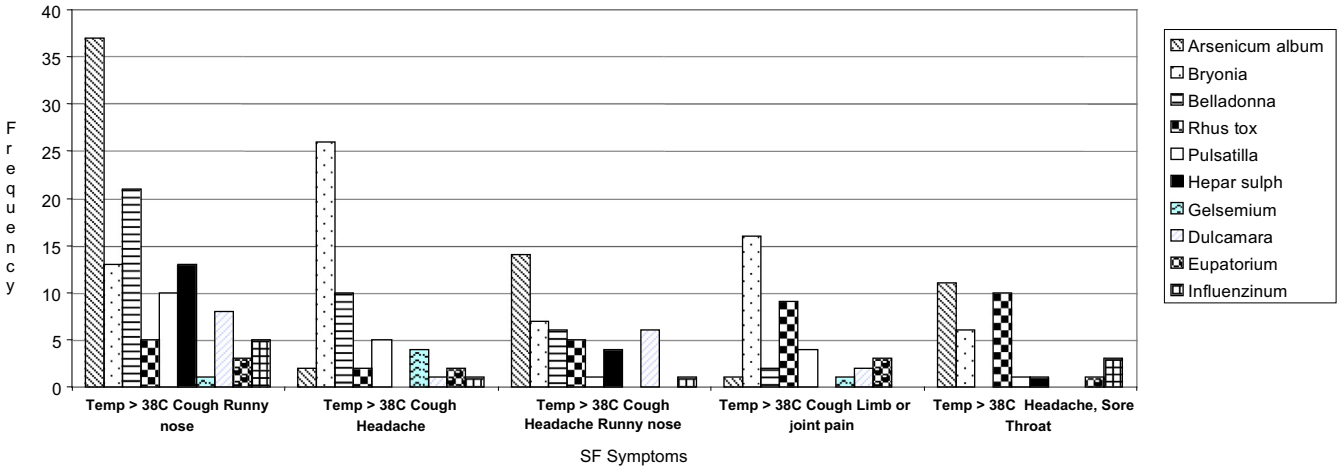


Figure 2 Frequency chart of SF symptoms against top 10 most frequently prescribed remedies

diagnosis of SF.[12] It also noted that many people with 2009 A/H1N1 influenza might not have fever, but would have other symptoms. With these broader criteria, our sample of patients with ILI might have been substantially larger.

Arsenicum album was the most popular choice of prescription, strongly (but not exclusively) associated with the frequently observed temperature >38°C + cough + runny nose (Figure 2). It was also associated with the highest rate of retention over more than one appointment. The preference for *Arsenicum album* is consistent with the CCRH's published advice to practitioners on the nature of the genus epidemicus. *Bryonia* was also a popular choice of remedy, eclipsing *Arsenicum album* in some combinations of symptoms, notably for temperature >38°C + cough + headache, and temperature >38°C + cough + limb or joint pain (corresponding to its homeopathic indications).

In view of the broad geographical distribution of the practitioners involved, it seems likely that their practice reflected pan-India prescribing behaviour. Given that patients with the similar symptoms received a number of different homeopathic medicines, it may be that prescriptions were based on additional factors not captured in the *Excel* spreadsheet. There were no data on *Arsenicum album* use relative to areas of high endemic arsenic,[13,14] for example, which would have been interesting and perhaps a matter for consideration if a similar demographic sample in India were analysed in future studies.

The study also showed that viral confirmation by laboratory testing was very low, possibly due to lack of this facility for the majority of the demographic and the limited value of testing in a generally self-limiting disease in the absence of complications.

The total number of FU appointments reporting underlying co-morbidity was too low for any meaningful relationship to be analysed. In any event, and cognizant of the limitations of observational study design, we do not emphasise the clinical outcomes from an observational study of this nature. By definition, such a study involves no control group, and so we are unable to take into account factors such as regression to the mean, or other spontaneous improvement of symptoms over time. We have no basis for presuming that those who did not return to the practitioner made a full recovery, but it is likely that in most cases the typical progress of the disease was acute and uncomplicated. For a future project, the employment of research nurses would enable the recording of the FU status of patients who did not return for a second visit, enhancing the ability to assess treatment outcomes. Such additional contribution would also assist practitioners who, as found in the current study, are unable to use the electronic data sheet or to devote time to data entry.

In the context of epidemics/pandemics of influenza, an effective data collection and analysis system provides a greater understanding of homeopathic management. It can also establish the technological and professional infrastructure to help in identifying and studying the *genus*

Table 5 Top 5 most frequently reported SF symptoms for 73 patients at second appointment (i.e. first FU)

Swine flu symptom	*Frequency*
Temp >38°C, cough, runny nose	7
Temp >38°C, limb or joint pain, runny nose	5
Temp >38°C, cough, headache, limb or joint pain	4
Temp >38°C, cough, headache, limb or joint pain, Runny nose	4
Temp >38°C, cough, sore throat	4

Table 6 Changes in remedy for the 73 FU patients with valid SF symptoms at second appointment

Top 5 remedies prescribed at first appointment	*Prescription at 1st appmt.*	*Prescription at 2nd appmt.*	*Relative frequency of use at second appointment (first FU)*
Arsenicum album	17	11	64.7%
Belladonna	11	6	54.5%
Bryonia	8	3	37.5%
Hepar sulph	5	2	40.0%
Combination	4	N/A	N/A (various medicine combinations used)

Table 7 Time interval analysis

Appointment interval	*Median time interval (days)*	*Lower quartile*	*Upper quartile*
1st–2nd	3	2.0	5.0
2nd–3rd	2	1.0	4.0
3rd–4th	1	1.0	3.0
4th–5th	1	1.0	2.3
5th–6th	2	1.5	3.0

epidemicus that may be relevant, as well as to facilitate more rigorous clinical studies in homeopathy and influenza. The 2009 A/H1N1 virus continues to be present at low prevalence (approximately 5% of confirmed cases of influenza in the USA), without significant morbidity; it is a recommended constituent of the 2013–14 influenza vaccine.[15] A future pandemic is thought to be inevitable. Historically, however, the frequency has varied widely: there have been four influenza pandemics since 1957, with a 22-year hiatus prior to 2009. During such lengthy time intervals, other infectious conditions, e.g. SARS or Ebola, might similarly be the subject for data collection initiatives in homeopathy.

Conclusions

It is feasible to collect useful data on homeopathic prescribing for patients during a serious outbreak of influenza. The 2009 A/H1N1 influenza pandemic in India was characterised by several prominent symptoms and symptom/medicine associations, particularly temperature >38°C + cough + runny nose (*Arsenicum album*) and temperature >38°C + cough + headache (*Bryonia*). The symptom combinations described were not, however, unique to the medicine given. Future studies should collect additional keynotes that influence the choice of homeopathic medicine.

Data contributed by

Barvalia Praful, Dhawale KM (Mumbai); Basu Biswajit, DB Sarkar, Kolkata; Rao Kameswar (Pune); Lipipushpa Debata (Puri); JS Arya (Guwahati); Kumar Vivekanand (Noida); MN Sinha (Jaipur); Bagai Reeta, Bala Sudha, Bodhi Beena, Chaurasia Prashant, Dash Sandhya Rani, Joseph Franko, Kaila Sandeep, Kalsi Amrit, Khare Renu, SC Mehta, Prakash Om, Prakash Ravi, Singh Hari, Vardan Rahul (New Delhi).

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