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## Homeopathy for respiratory tract infections: A systematic review

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#### Abstract

**Background:** In many developing countries, respiratory tract infections are a major health problem especially lower respiratory infections are the major reason of mortality among children's. Thus our systematic review was aim to evaluate the efficacy of homeopathic medicines in respiratory tract infections.

**Methodology:** A comprehensive computerized literature search was carried out to find clinical research articles. Pub med, Medline, Google scholars, science direct and Thieme-E- journal of homeopathy was searched extensively. Only human based clinical trials were included in this review. Animal trials, abstracts of articles and pilot studies were not included. Full length research articles were included. All randomized double blind placebo-controlled prospective observational clinical research articles were included.

**Results:** Total 40 research articles were studied for the review. Irrelevant and duplicated articles were removed. Total 21 articles were selected for the systematic review. 3 articles were found about acute respiratory tract infections and 19 articles were about upper respiratory tract infection. No single article were found on lower respiratory tract infections.

**Conclusion:** This systematic review concluded that homeopathic medicines are safe and effective in acute and upper respiratory tract infections. But more randomized placebo controlled studies should be conducted to strengthen the available evidence. In future studies must be conducted in lower respiratory tract infections as we did not found any article related to it.

**Keywords:** Homeopathy, Respiratory tract infections, randomized clinical trials in Respiratory tract infections and homeopathy, upper and lower respiratory tract infections and homeopathic way of treatment

#### Introduction

In elderly individuals respiratory tract infections are very common resulting in prolonged recovery, decreased routine activity and more frequent complication including death. Respiratory tract infections most commonly occur in winter but its incidence is lowest in the summer<sup>[1]</sup>. Any infection of lower or upper respiratory tract is called as respiratory tract infection<sup>[2, 3]</sup>. Common cold, laryngitis, pharyngitis or tonsillitis, acute rhinitis, acute rhino sinusitis and acute otitis media are the infections of upper respiratory tract while lower respiratory infections includes acute bronchitis, bronchiolitis, pneumonia and tracheitis<sup>[3]</sup>. Upper respiratory tract infections are commonly occurring in children's<sup>[4]</sup>.

In many developing countries, respiratory tract infections are a major health problem especially lower respiratory infections are the major reason of mortality among children's<sup>[5]</sup>. As mentioned in many previous research article, homeopathic medicines are affordable<sup>[6, 7]</sup>. That's why in many acute and chronic disease conditions use of homeopathy is increasing<sup>[8]</sup>. Homeopathy is based on the principle of "like cures like" which means, remedies are effective which induce symptoms most similar to the disease<sup>[9, 12]</sup>. Homeopathic way of treatment is widely used but still it is a topic of discussion<sup>[13, 16]</sup>.

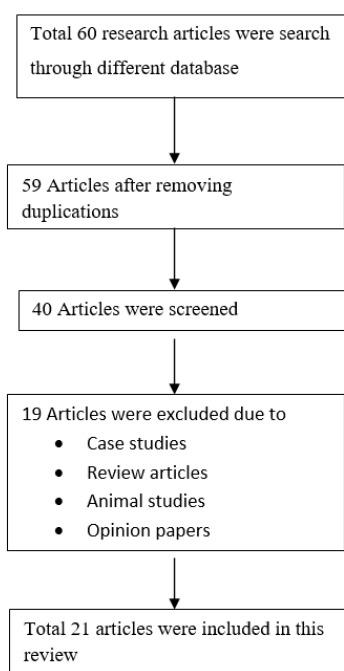
Homeopathic medicines are effective? Still a topic of debate due to lack of sufficient evidences<sup>[17]</sup>. To answer this question, more scientific and evidence based research is the need of time. Thus our systematic review was aim to evaluate the efficacy of homeopathic medicines in respiratory tract infections

#### Methodology

A comprehensive computerized literature search was carried out to find clinical research

Articles. Pub med, Medline, Google scholars, science direct and Thieme-E- journal of homeopathy was searched extensively. Only human based clinical trials were included in this review. Animal trials, abstracts of articles and pilot studies were not included. Full length research articles were included. All randomized double blind placebo-controlled prospective observational clinical research articles were included. We also excluded the articles which were not relevant to our study. Opinion papers and articles without any solid conclusion were also excluded from review.

Total 60 articles were searched through different database. 59 articles were remained after duplication removal. Two reviewers independently screened the articles. 19 articles were not included in this review due to exclusion criteria. 21 full length articles were included in this review. 4 articles were found on acute respiratory tract infections and 17 articles were on upper respiratory tract infections. No single article was found on lower respiratory tract infections



**Fig 1:** over view of study

## Results

Total 40 research articles were studied for the review. Irrelevant and duplicated articles were removed. Total 21 articles were selected for the systematic review. A comparative study was conducted by Max haidvogl and he concluded that homeopathic medicines are equally effective as conventional treatments [18]. Michalsen was investigated that, in acute respiratory tract infections homeopathic medicine is safe and effective for both children and adult. The study was prospective non-interventional study [19]. Another trial was conducted by Camila Monteiro Siqueira and the design of this trial was randomized, blind, placebo controlled. Results of this trial was that homeopathic medicines are very effective in reducing the severity of flue and acute respiratory tract infections [20].

Multi-centric open clinical trial was conducted by on acute rhinitis. The main findings of this trial was that homeopathic medicines are efficacious in the management of acute rhinitis [21]. One study was conducted on 134 patients of chronic sinusitis. It was a prospective multi-centric observational study and the conclusion of this study was that good

improvement was seen in patients after the use of homeopathic medicines [22]. On seasonal allergic rhinitis a study was conducted by Goossens *et al.* in 2009. The study design was prospective open label and comparative. The major finding of study was that after homeopathic treatments, patients reported an alleviation of their symptoms in allergic rhinitis [23].

Randomized double blind placebo controlled trial was conducted in patients with acute viral tonsillitis. After the use of homeopathic complex a good improvement were seen in patients. Interestingly, no patient reported any adverse effect [24]. Aslaksteinsbekk conducted a clinical trial for the evaluation of individualized homeopathic treatment in upper respiratory tract infections. He concluded that homeopathic treatment is efficacious in the prevention of URTI [25]. For recurrent tonsillitis an international pragmatic, randomized controlled trial was conducted in 2017. SilAtro-5-90 and standard treatment was used in 256 patients [26].

Robert van Haselen conducted a clinical trial on safety and effectiveness of homeopathic medicine in lower respiratory tract infections with fever in pediatrics and positive result was obtained [27]. Zabolotnyi conducted a clinical trial in patients with maxillary sinusitis to evaluate the safety and efficacy of homeopathic medication (Sinfrontal). As it was prospective, randomized double blind placebo controlled study and he concluded that complex homeopathic medication is safe and effective [28]. One clinical trial was conducted to evaluate the impact of homeopathic medication on upper respiratory tract infections in COPD patients. This was prospective observational multi-center study. Main findings of this study was that homeopathic medication use during the influenza-exposure period may have a beneficial impact at reducing URTIs number and duration in COPD patients [29].

One study was conducted on upper respiratory tract infections associated with cold. The trial design was non-randomized observational. Major findings of trial was that homeopathic medicines may be effective for this condition [30]. Alessandro Zanasi worked on newly formulated homeopathic syrup for the patients suffering from acute cough in upper respiratory tract infections and acute bronchitis and study design was randomized double blind placebo controlled. Main findings of this trial were that, homeopathic syrup helps in reducing the symptoms severity of cough and sputum viscosity [31]. AslakSteinsbekk carried out a randomized double blind placebo controlled clinical trial among children to investigate the effect of self-treatment with one of three self-selected ultra-molecular homeopathic medicines for the prevention of childhood upper respiratory tract infections [32]. Jennifer Jacobs also conducted a randomized controlled trial of homeopathic syrup in the treatment of cold symptoms in young children and major findings of this trial was that homeopathic syrup appeared to be effective in reducing the severity of cold symptoms [33].

Prospective comparative observational trial was conducted in children's of otitis media. Patients were randomly assigned to group 1 or group 2. No permanent sequels were found in both groups [34]. Another study was conducted in 1994 by Weiser and Clasen. It was a randomized double blind trial. Euphorbium compositum S nasal spray was used in sinusitis patients. Euphorbium compositum S nasal spray had shown reliable efficacy and good tolerance in sinusitis patients [35]. Homeopathic ear drops was used as an adjunct to standard therapy for the treatment of acute otitis media in 119 patients. It was a randomized clinical trial. It was concluded that

homeopathic ear drops moderately effective in this condition [36].

A multicenter open, comparative, randomized controlled clinical trial was conducted to assess the effectiveness, safety and tolerability of a complex homeopathic medicinal product in the prevention of recurrent acute upper respiratory tract infections in children. Conclusion of this study was that, a

comparable reduction of Upper Respiratory Tract Infections in both treatment groups observed [4]. Randomized parallel trial was conducted Aslak Steinsbekk in 2007. Patients were randomly assigned to homeopathic care or one of three self-prescribed homeopathic medicines. No relevant effect of homeopathic care and homeopathic medicines was seen [37].

**Table 1: Acute respiratory tract infections**

Paper Ref	Drug	Patient No	Disease	Research Methodology	Major findings
Haidvogel, <i>et al.</i> 2007 [18]	<ul style="list-style-type: none"> <li>▪ Hepar sulphuris,</li> <li>▪ Lycopodium clavatum,</li> <li>▪ Belladonna,</li> <li>▪ Sulphur,</li> <li>▪ Bryonia alba,</li> <li>▪ Mercurius solubilis,</li> <li>▪ Phytolacca decandra,</li> <li>▪ Phosphorus,</li> <li>▪ Pulsilla,</li> <li>▪ Calcarea carbonica,</li> <li>▪ Kaliumbichromicum,</li> <li>▪ Allium cepa,</li> <li>▪ Gelsemium sempervirens,</li> <li>▪ Causticum</li> </ul>	1,577	Acute respiratory and ear complaint	Comparative study	Homeopathic treatment was equally effective to conventional treatment
Michalsen, Uehleke <i>et al.</i> 2015 [19]	Complex homeopathic drug (Contramutan N Saft).	1050	Acute respiratory tract infections	Prospective non-interventional study	Homeopathic complex drug was shown to be safe and effective for children and adults likewise.
Siqueira, <i>et al.</i> 2016 [20]	Group 1: Homeopathic complex, group 2: placebo group 3: Influenza Bio	445	Influenza and acute respiratory tract infections	Blind, randomized, placebo controlled	Use of homeopathic medicines minimizes the severity of influenza and acute respiratory tract infections

**Table 2: Upper respiratory tract infections**

Paper Ref	Drug	Patient No	Disease	Research Methodology	Major findings
Nayak, <i>et al.</i> 2010 [21]	<ul style="list-style-type: none"> <li>▪ Nux vomica</li> <li>▪ Mercurius solubilis</li> <li>▪ Belladonna</li> <li>▪ Dulcamara</li> <li>▪ Aconite napellus</li> <li>▪ Sulphur</li> <li>▪ Calcarea carbonica</li> <li>▪ Hepar sulph</li> <li>▪ Pulsatilla nigricans</li> <li>▪ Chamomilla</li> <li>▪ Carbo vegetabilis</li> <li>▪ Kaliumbichromicum</li> <li>▪ Elaps coralinus</li> </ul>	784	Acute rhinitis	Multi-centric open clinical trial	Major findings of this study was that homeopathic medicines are effective in the management of acute rhinitis
Witt, <i>et al.</i> 2009 [22]	Homeopathic medicines	134	Chronic sinusitis	Prospective multi-centric observational trial	This observational study showed relevant improvements that persisted for 8 years in patients seeking homeopathic treatment because of sinusitis.
Goossens, <i>et al.</i> 2009 [23]	Individualized homeopathic medicines	74	Seasonal allergic rhinitis	prospective, open, non-comparative	After homeopathic treatment, patients reported an alleviation of their symptoms of allergic rhinitis
Malapane, Solomon <i>et al.</i> 2014 [2]	1-Homeopathic complex (Atropabelladonna D4, Calcarea phosphoricum D4, Hepar sulphuris D4, Kaliumbichromat D4, Kaliummuriaticum D4, Mercurius protoiodid D10, and Mercurius biniodid D10) 2-Placebo	30	Acute viral tonsillitis	Randomized double blind placebo controlled study	The homeopathic complex used in this study exhibited significant anti-inflammatory and pain-relieving qualities in children with acute viral tonsillitis. No patients reported any adverse effects
Steinsbekk, Fønnebo <i>et al.</i> 2005 [25]	Individualized homeopathic treatment	169	Upper respiratory tract infections	Open, pragmatic, randomized, parallel group trial	Major findings of this study was that individualized homeopathic treatment is effective for the prevention of URTI
Palm, <i>et al.</i> 2017 [26]	<ul style="list-style-type: none"> <li>▪ SilAtr-5-90</li> <li>▪ standard treatment</li> </ul>	256	Recurrent tonsillitis	International, Pragmatic,	SilAtr-5-90 is given alongside mainstream

				randomized, controlled clinical trial	symptomatic treatment may bring therapeutic benefit to patients suffering from recurrent tonsillitis
van Haselen, <i>et al.</i> 2016 [27]	1. Standard treatment 2. IFC is the combination of 6 homeopathic medicines (Aconitum D3, Bryonia D2, Eupatorium perfoliatum D1, Gelsemium D3, Ipecacuanha D3, and Phosphorus D5),	261	Upper respiratory tract infections with fever	Randomized controlled clinical trial	IFC as add-on treatment in pediatric URTI reduced global disease severity, shortened symptom resolution, and was safe in use
Zabolotnyi, <i>et al.</i> 2007 [28]	Complex homeopathic medication(28) and placebo	113	Acute maxillary sinusitis	Prospective, randomized double blind placebo controlled	This complex homeopathic medication was safe and appeared to be an effective treatment for acute maxillary sinusitis.
Diez, <i>et al.</i> 2019 [29]	<b>Group 1:</b> conventional and homeopathic medication <b>Group 2:</b> conventional treatment only	219	Upper respiratory tract infections in COPD patients	Prospective observational study	Homeopathic medication use during the influenza-exposure period may have a beneficial impact at reducing URTIs' number and duration in COPD patients
Schniedel, <i>et al.</i> 2006 [30]	Complex Homeopathic medicines compared with conventional therapies	397	Upper respiratory infections associated with cold	Non-randomized observational trial	Homeopathic treatment may be a useful component of an integrated symptomatic therapy for the common cold
Zanasi, <i>et al.</i> 2014 [31]	Homeopathic syrup	80	Acute cough in URTI and acute bronchitis	A randomized, double-blind, placebo-controlled trial	This homeopathic syrup helps in reducing the symptoms severity of cough.
Steinsbekk, <i>et al.</i> 2005 [32]	1-Ultra-molecular homeopathic medicines (Calcarea carb, Pulsatilla, Sulphur) 2- Placebo	251	Upper respiratory tract infections	Double-blind, randomized parallel group placebo controlled design	In this study there was no effect over placebo for self-treatment with one of three self-selected, ultra-molecular homeopathic medicines in preventing childhood URTI
Jacobs, <i>et al.</i> 2016 [33]	Homeopathic cold syrup and placebo	261	Cold	Randomized controlled trial	Homeopathic cold syrup appeared to be effective in reducing symptom severity
Friese, <i>et al.</i> 1997 [34]	<b>Group 1:</b> ▪ Aconite napellus, ▪ Apismellifica ▪ Belladonna ▪ Capsicum ▪ Chamomilla ▪ Kaliumbichromicum ▪ Lachesis ▪ Lycopodium ▪ Mercuriussolubilis ▪ Okoubaka ▪ Pulsatilla ▪ Silicea <b>Group 2:</b> ▪ Nasal drops ▪ Antibiotics ▪ Antipyretics	131	Otitis media in children's	Prospective comparative observational trial	No permanent sequels were found in either groups
Weiser and Clasen 1994 [35]	Euphorbium compositum S nasal spray	155	Sinusitis	Randomized double blind trial	This study revealed a reliable efficacy and good tolerance of euphorbium compositum S nasal spray in the therapy of sinusitis
Taylor and Jacobs 2011 [36]	Homeopathic ear drops as an adjunct to standard therapy	119	Acute otitis media	Randomized clinical trial	Homeopathic drops are moderately effective in treating acute otitis media in childrens
Jong, <i>et al.</i> 2016 [4]	CalSuli-4-02 and comparator homeopathic product	200	Recurrent acute upper respiratory tract infections	Prospective, multicenter, randomized, open, comparative clinical trial	A comparable reduction of URTIs in both treatment groups observed. However, CalSuli-4-02 led to significantly less URTI-related complaints and higher treatment satisfaction.
(Steinsbekk, Lewith <i>et al.</i> 2007 [37])	Self-prescribed Homeopathic medicines vs homeopathic care	208	Upper respiratory tract infections	Randomized parallel study	The main findings of this study that there is no relevant effect of homeopathic care and homeopathic medicines given by child's parents

## Discussion

This systematic review was carried out to establish the fact that homeopathic medicines are safe and effective. For this purpose full length articles were studied related to respiratory tract infections. All searched articles were about acute

respiratory tract infections or upper respiratory tract infections, not a single article found about lower respiratory tract infections. Although efficacy of homeopathic medicines is still a controversial topic but despite this fact majority of patients are highly satisfied with the use of homeopathic

medicines<sup>[38]</sup> due to safety aspect of homeopathic medicines<sup>[39]</sup>. As we all know, Homeopathy was introduced by German physician Samuel Hahnemann. He was the person who established basic principles of homeopathy<sup>[40]</sup>. Homeopathic medicines are prescribed according to like cures like and potentization principles<sup>[41]</sup>.

Homeopathy is one of the most popular form of complementary and alternative medicines<sup>[39]</sup>. Thus the main aim of this review to document the safety and efficacy of homeopathic medicines in respiratory tract infections. In this review total 21 articles were included. 3 articles were related to acute respiratory tract infections and 18 were related to upper respiratory tract infections. All of three studies concluded that homeopathic medicines are effective in acute respiratory tract infections. A comparative study was conducted in 1577 patients with acute respiratory and ear complaints. Homeopathic treatment was equally effective to conventional treatment were the main findings of study. The main flaws of this study were that patients were not randomly assigned to their respective study groups. Patient's preference for homeopathic medicines was also a big limitation of study<sup>[18]</sup>. Moreover the result of two clinical trial was that homeopathic medicines are safe and equally effective in certain disease conditions<sup>[19,20]</sup>.

Out of 21 articles, 18 articles were on upper respiratory tract infections. In one study it was concluded that homeopathic medicines were effective in acute rhinitis condition. It was a multi-centric observational study<sup>[21]</sup>. In chronic sinusitis and seasonal allergic rhinitis two articles were found and the main findings of these articles were that, homeopathic remedies are effective<sup>[22, 23]</sup>. Although Homeopathic medicines are found to be effective in many respiratory complaints<sup>[42]</sup> but more refined and strong methodological studies should be conducted to establish concrete conclusion.

Overall significant results were found about the safety and efficacy of homeopathic medicines in upper respiratory tract infections<sup>[4, 24, 31, 33, 35, 37]</sup>. Only few articles were not reached to any concrete conclusion due to some limitations of clinical trial. Insufficient sample size, high dilutions of homeopathic medicines were the major flaws of the study<sup>[32, 34]</sup>. But according to Samuel Hahnemann, smallest amount of medicine can produce better result<sup>[43]</sup>.

## Conclusion

This systematic review concluded that homeopathic medicines are safe and effective in acute and upper respiratory tract infections. But more randomized placebo controlled studies should be conducted to strengthen the available evidence. In future studies must be conducted in lower respiratory tract infections as we did not find any article related to it.

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