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ORIGINAL PAPER

Should homeopathy be considered as part of a treatment strategy for otitis media with effusion in children?

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Background: **Otitis media with effusion (OME) or 'glue ear' is the most common cause of pediatric hearing loss, and a drain on global healthcare resources. It is associated with frequent episodes of acute otitis media (AOM) and upper respiratory tract infections (URTIs) and linked with environmental and social factors, including diet, smoking households, overcrowding and day care use. Current conventional treatment for OME is unsatisfactory, the area constitutes an 'effectiveness gap'. Homeopathy is a relatively common and popular choice of complementary and alternative medicine (CAM) treatment for childhood conditions, including otitis media. Antibiotic resistance is now a major global problem, homeopathy may have a role to play in combating its further development.**

Method: **Systematic review of the literature for clinical studies of homeopathy for AOM and upper respiratory tract disorders. Discussion in the context of current treatment options and public health issues including antibiotic resistance.**

Results: **Several randomized trials and outcome studies of homeopathy for AOM and upper respiratory tract disorders have been published. The results are encouraging, but the volume of research is small and insufficient to draw definitive conclusions.**

Conclusions: **A strategy based on multi-centre or multiple, linked clinical trials of homeopathy for OME, using a pragmatic framework and evaluating long-term effects in different settings, in conjunction with other healthcare and social services should be considered. Reduction of antibiotic use is an important outcome.** *Homeopathy* (2013) **102**, 145–150.

Keywords: Otitis media; Effusion; Childhood; Homeopathy; Effectiveness; Systematic review

Background

Otitis media with effusion (OME), or 'glue ear', is one of the most common childhood medical conditions in the developed world.[1–3] and the main cause of conductive hearing loss in children.[4,5] Significant healthcare resources have been devoted to its management; the estimated cost of tympanostomy surgery in the UK in 2009 was approximately £30 M per annum.[5] Although spontaneous recovery rates are good it could be argued that there is 'effectiveness gap'[6,7] in conventional care. Persistent OME is generally unresponsive to most standard medical treatments including steroids and anti-inflammatories[8,9] and standard surgical procedures have been widely questioned.[5,10–12] Given the extent of the problem, the development of antibiotic resistant microorganisms[3] and lack of agreement over a safe or effective treatment strategy, this paper asks whether the use of homeopathy for the management and treatment of OME should be more widely considered in the treatment and management of OME and acute episodes of otitis media associated with it.

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Literature search strategy

A literature search was conducted using specific keywords linked to homeopathy and AOM. Search items included otitis media, OME, glue ear, tympanometry, homeopathy, children, pediatric, complementary and alternative medicine (CAM) and upper respiratory tract infections (URTIs). Electronic databases systematically searched were MEDLINE (January 1990 to December 2012), the Cochrane Library including Ear, Nose and Throat Disorders Reviews and CENTRAL from January 1996 to December 2012. ScienceDirect and Elsevier Health periodicals were also searched. Searches were limited to human trials reported in English. Case notes of homeopathic treatments for otitis media described and discussed in books and journals have not be included.

Standard treatments for OME

The term otitis media can refer to a spectrum of diseases including acute otitis media (AOM), OME, and chronic suppurative otitis media with effusion (CSOM).[13–15] OME is defined as serous or mucoid effusion behind the tympanic membrane, without signs or symptoms of acute infection or suppuration.[4] The condition is regarded as chronic when has been present for more than three months, by which time the fluid can become 'glue-like.'[16] Most children with OME show a flat, low compliance trace[17] with a conductive hearing loss of more than 25 dB. Hearing loss can be difficult to detect with audiograms in children less than 4 years.[18] Tympanometry is therefore frequently used to measure the proportion of an acoustic signal transferred from the external to the internal ear and compare the absorbed and reflected components to indicate middle ear pressure.

With up to 80% of children under the age of 10 experiencing at least one episode at some stage[19] OME is so common place that some authorities question whether it even constitutes pathology.[4] Frequently following on from a respiratory or ear infection, OME often resolves in a matter of weeks, with or without treatment. In about 40–50% of cases of OME neither parent, caregiver nor affected child report any problems other than mild hearing loss, however in some children OME is associated with other symptoms such as ear pain, sleep disturbance, ear rubbing, dizziness, clumsiness and behavioral disorders.[20]

As one of the most commonly diagnosed childhood complaints, the costs of OME to healthcare services are high. In 2009 the estimated cost of OME in primary care in the UK per annum was £20–60 M.[16] Suitability of various treatments for OME is still a matter of lengthy debate, with wide regional and international variations in strategies.[21–23] The effectiveness of medicines and treatments for OME including decongestants, mucolytics, steroids, antihistamines, antibiotics and eustachian tube auto-inflation are all unproven for more than short-term relief.[12,16,19,24,25] While temporarily reducing middle ear effusion symptoms in some cases,[26,27] the benefits over risks[5,28] of tympanostomy tube insertion and adenoidoscopy have been questioned.[5,24,26,29] Post-tympan ostomy tube infections are common after tube placement[28] with the increasing prevalence of meticillin-resistant staphylococcus aureus (MRSA) otorrhea after tympanostomy tube placement an added concern.[16,30] The National Institute for Health and Clinical Excellence's (NICE) 2008 Clinical Guideline nevertheless recommended surgical intervention for children with bilateral OME of more than 3 months duration. Use of other conventional strategies, and complementary or alternative therapies such as dietary invention, homeopathy and cranial osteopathy, were not advised in the report.[19]

Use of a long-term watch and wait policy for OME might also pose risks to development and wellbeing.[16] In some children OME causes up to 2 years of hearing loss with the risk of softer speech sounds and voiceless consonants being missed.[4] Due it its intermittent quality effects of OME on language and school performance are difficult to assess, however studies suggest it can impact negatively with pre-existing cognitive and learning problems.[20,31]

Environmental factors implicated in OME

Studies of OME in at risk population groups provide important information concerning its etiology and progression. OME is particularly common and severe in certain pediatric groups, such as those with Down syndrome, unrepaired cleft palate and craniofacial disorders[19] where disease is attributed to eustachian tube dysfunction and lack of functional resistance to aspiration of nasopharyngeal content.[32] Socio-economic and environmental factors also play a part in severity and impact of OME on cognitive and developmental outcomes.[31] In Australia, indigenous children suffer from AOM at an earlier age, more frequently and with greater severity than non-indigenous children.[32–34] Similar trends are recorded among Inuit, Mentis and North Canadian communities, where the prevalence of OME is up to 40 times that found in the urban south.[35] Archeological evidence indicates that the recent incidence of OM among indigenous children in Greenland, Alaska and Canada is linked to social, cultural and dietary changes following on from colonization.[36] Identified risk factors for OME include premature birth, gender (more common in males), exposure to parental smoking and air pollution, lack of breastfeeding, feeding lying down, number of siblings, ethnicity and poor educational status of the parents.[32,37] Social policy and parent education are therefore vital in the prevention and treatment of OME and its effects in the developed and developing world.[35,38]

An association between AOM URTI and OME is well established with one condition more likely to develop another.[11]

35% of post AOM cases will go on to develop OME after 6 months.[39] Children diagnosed with AOM are more likely to present with subtle immune deficiencies, a history of recurrent infections, and allergic rhinitis and/or asthma.[32,40,41]