



ETHNOMEDICINAL PRACTICES FOR CURING EAR, NOSE AND THROAT (E.N.T.) DISEASES : A CRITICAL REVIEW

Anindita Ghosal and Phatik Tamuli*

Microbiology and Plant Pathology Laboratory, Department of Botany,
Darrang College, Tezpur - 784 001 (Assam), India.

Abstract

The medicinal plants are using for treating various infectious diseases and has been used by the majority of the world's population for thousands of years. Human infections caused by various micro-organisms such as bacteria and fungi constitute a very serious problem. The ear, nose and throat are the vital organs of the body and they are interconnected to each other. For healthy body, maintaining the health is utmost important. Thus, the study and documenting of traditional ethno medicines practiced by various ethnic groups is essential. The ethnomedicinal plants which are used to treat ear, nose and throat diseases are safe, effective and inexpensive, for which there is a global trend for the revival of traditional herbal medicine. A review was made to explore some important ethnomedicinal plants used by healers of different ethnic groups of world to cure ENT diseases. A total of 51 plant species along with their uses have been discussed.

Key words : Ethnomedicine, E.N.T. disease, plant species, ethnic groups, review.

Introduction

The ears, nose and throat are important parts of our body that are used on a daily basis. Dysfunction to this can dramatically affect the quality of life. Diseases of ear, nose and throat (ENT) often have serious consequences including hearing impairment, and emotional strain that lower the quality of life of patients. Diseases of the ear, nose and throat (ENT) affect the functioning of adults as well as children. It has been envisaged that with increase in global population, infections remain the most important causes of disease, with upper respiratory infections causing hearing loss and learning disability particularly in children.

A variety of conditions may affect your hearing or balance, such:

- Ear infections.
- Tinnitus, a roaring in your ears, can be the result of loud noises, medicines or a variety of other causes.
- Meniere's disease may be the result of fluid problems in your inner ear; its symptoms include tinnitus and dizziness.

- Ear barotrauma is an injury to your ear because of changes in barometric (air) or water pressure.

Many problems besides the common cold can affect the nose. They include

- Deviated septum - a shifting of the wall that divides the nasal cavity into halves
- Nasal polyps - soft growths that develop on the lining of your nose or sinuses
- Nosebleeds
- Rhinitis - inflammation of the nose and sinuses sometimes caused by allergies. The main symptom is a runny nose.
- Nasal fractures, also known as a broken nose.

Other problems that affect the throat include

- Tonsillitis - an infection in the tonsils
- Pharyngitis - inflammation of the pharynx
- Cancers
- Croup - inflammation, usually in small children, which causes a barking cough.

Ear, nose and throat diseases are serious public health problems with universal distribution affecting all age groups (Ibekwe, Nwaorgu, Onakoya, Ibekwe, 2005; Kishve,

**Author for correspondence* : E-mail : tamulip@yahoo.com

Kumar, Kishve, Aarif, Kalakoti, 2010). The knowledge of the ear, nose, throat, head and neck diseases is very important because of the type of morbidities which they cause due to impairment of the inherent physiologic functions that usually take place in the head and neck region. These include problems of hearing, breathing, swallowing, and phonation, speech, olfaction, and taste, protection of the lower respiratory tract and clearance of secretions. The knowledge of these ears, nose and throat diseases can help the administrators and policy makers in the community to make adequate strategic health planning especially in the developing countries, where poverty, ignorance, insufficient personnel and lack of basic health facilities abound (Fasunla, Samdi and Nwaorgu, 2013).

According to World Health Organization 42 million people (age > 3 years) have hearing loss. The major cause for hearing loss is otitis media. The most common ear, nose and throat disorders were otitis media (18.25%), rhinitis (5.8%) and tonsillitis (11.7%), respectively (Kishve,

Kumar, Kishve, Aarif and Kalakoti, 2010).

Medicinal plants have very important place as they not only maintain the health and vitality of human beings and animals, but also cure several diseases, including ear, nose and throat disorders without causing any toxicity. The use of medicinal plants in the treatment of infectious diseases is an age-old practice. Knowledge of medicinal plants is, however, rapidly dwindling due to the influence of western lifestyles, reduction in number of traditional healers and lack of interest of the younger generations to carry on the tradition. Although, antibiotics have contributed to the control of ENT infections, their overuse and misuse is now seen to cause an increase in antibiotic resistance (Bhattacharyya and Shapiro, 2002). With the increasing resistance of microorganisms associated with ENT infections and increasing environmental pollution, alternative sources for new drugs are necessary. Some important ethnomedicinal plants and their uses to cure various Ear, nose and throat diseases are discussed in this paper (table 1).

Table 1 : Ethnomedicinal plants and their uses for curing E.N.T. diseases.

S. no.	Plant name	Family	Uses
1.	<i>Abies pindrow</i> Royale.	Pinaceae	Decoction of dried shoots and fresh leaves are used to treat cough, asthma and other chest infection (Shah, Hussain and Abbasi, 2015).
2.	<i>Adhatoda vasica</i> Nees.	Acanthaceae	Leaves are ground with the flowers of <i>Hibiscus rosa-sinensis</i> and taken orally to treat asthma (Muthu, Ayyanar, Raja and Ignacimuthu, 2006).
3.	<i>Aegle marmelos</i> Correa.	Rutaceae	3-4 fresh leaves are ground to extract the juice, which is taken with sugar once daily for 3 days to cure nasal bleeding (Sonowal, 2013).
4.	<i>Aesculus indica</i> Wall ex Camb. Hook.f.	Hippocastanaceae	Extracted juice of the leaves is used traditionally to treat whooping cough (Shah, Hussain and Abbasi, 2015).
5.	<i>Allium sativum</i> L.	Alliaceae	i) A decoction of leaf and bulb is made. Cloves of the bulb are also used. A decoction of leaf and bulb is taken orally and cloves of the bulb may be chewed to treat throat infections. ii) Leaves are warmed. The juice is squeezed onto the ear to relieve ear ache (Dyubeni and Buwa, 2012).
6.	<i>Albizia lebbeck</i> L. Benth	Fabaceae	Decoction of bark is used to treat allergic conditions such as allergic rhinitis, allergic asthma etc. (Maurya and Seth, 2014).
7.	<i>Alstonia scholaris</i> L.	Apocynaceae	Fresh barks are cut into small pieces and decoction is prepared which is later filtered through a cloth, concentrated and dried in shade; out of this small pills (each of ca 1–1.5 g) are made, three pills a day (for adults) is the recommended dosage for curing asthma (75%) (Sajem and Gosai, 2006).
8.	<i>Ajuga bracteosa</i> Wall. ex Benth.	Lamiaceae	The juice of the leaves is dropped into the ear cavity, drop wise (4-5 drops twice a day for 3 days) to treat ear ache, (Chantia, 2003).
9.	<i>Artemisia afra</i> L. Jacq. Ex Wild.	Alliaceae	Leaves are boiled and the warm extract is dropped into the ear drop wise to relieve earache (Dyubeni and Buwa, 2012).

Table 1 continued...

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10.	<i>Aster bakeranus</i> L.	Asteraceae	Roots are dried and powdered and are snuffed to relieve nasal congestion and nasal infection (Dyubeni and Buwa, 2012).
11.	<i>Azanza garckeana</i> (F. Hoffm.) Exell & Hillc.	Malvaceae	Roots are ground into powder and the extract dropped into the ear as medicine for earache, (Maroyi, 2013).
12.	<i>Barleria prionitis</i> L.	Acanthaceae	Leaf is grinded and the juice of the leaves mixed with “corpura” (camphor) is applied in ear to control ear ache (Mohanty <i>et al.</i> , 2015).
13.	<i>Bidens pilosa</i> L.	Asteraceae	Leaf is ground into paste and then mixed into water. The mixture is then used to treat ear problems (Khongsai, Saikia and Kayang, 2011).
14.	<i>Bischofia javanica</i> Blume	Phyllanthaceae	Lepcha tribe (sikkim) use leaves to treat sore throat (Pradhan <i>et al.</i> , 2008).
15.	<i>Borreria latifolia</i> K. Schum	Rubiaceae	Leaf juice mixed with seed powder of <i>Piper nigrum</i> L. and salt used in treatment of tonsillitis (Bora and Das, 2015).
16.	<i>Bryophyllum pinnatum</i> Lam.	Crassulaceae	Juice extracted from warm leaves is taken orally for asthma in children. It is applied as nasal drops for nasal congestion (Focho <i>et al.</i> , 2009).
17.	<i>Carica papaya</i> Linn.	Caricaceae	Smoke produced by burning dried leaves is inhaled for asthma. Decoction of roots is taken orally for cough (Focho <i>et al.</i> , 2009).
18.	<i>Cataranthus roseus</i> L.	Apocynaceae	Leaves are grounded and 2–3 drops of the extract is poured in the nostril to cure nasal bleeding (Sajem and Gosai, 2006).
19.	<i>Clitoria ternatea</i> L.	Leguminaceae	The leaves are smashed and the juice is applied to treat ear ache and swelling of adjacent gland to relive pain. (Dutta and Sarma, 2013).
20.	<i>Coccinia indica</i> L.	Cucurbitaceae	The juice of the leaves is used as ear drops for ear ache (Mohanty <i>et al.</i> , 2015).
21.	<i>Colocasia esculenta</i> L.	Araceae	Roots of <i>Colocasia esculenta</i> are grind into paste and the juice is used to treat pharyngitis, (Sikdar and Dutta, 2008).
22.	<i>Costus speciosus</i> koen.	Zingiberaceae	Decoction of leaves is applied into the ear and are used to treat otis (middle ear) problem (Kalita, Rout, Mishra and Sarma, 2015).
23.	<i>Crinum jagus</i> Thomson Dandy	Amirillidaceae	Leaves are heated and then squeezed so that the juice comes out and common salt is added. The mixture of the juice and common salt is dropped into the ear twice daily. The mixture is used to treat ear ache (Idu <i>et al.</i> , 2009).
24.	<i>Cucurma longa</i> L.	Zingiberaceae	Rhizomes are ground into powder and are mixed with half teaspoon of black pepper and one teaspoon of honey and are finally mixed in warm milk. This is taken to treat phlegm (Idu <i>et al.</i> , 2009).
25.	<i>Embellica officinalis</i> Gaertn.	Phyllanthaceae	For bleeding of the nose the seeds are fried in ghee and ground them and are applied as “Lep” to then forehead to stop bleeding from the nose, (Kumar <i>et al.</i> , 2012).
26.	<i>Erythrina variegata</i> L.	Fabaceae	Flower juice is used drop wise to stop bleeding from nose (Basumatary, Teron and Saikia, 2014).
27.	<i>Euphorbia hirta</i> L.	Euphorbiaceae	The stem is broken to extract the latex and dropped into the ear. 1-2 drop is applied twice daily. The latex is useful to treat ear ache (Idu <i>et al.</i> , 2009).
28.	<i>Hibiscus rosa-sinensis</i> Linn.	Malvaceae	2–3 drops of crushed flower juice are poured in the nostril to cure sinus (Sonowal, 2013).
29.	<i>Houttuynia cordata</i> Thunb.	Saururaceae	The extracts of whole part of the plant are used to treat nasal polyps, chronic sinusitis, etc (Meng <i>et al.</i> , 2002)

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30.	<i>Jasminum grandiflorum</i> L.	Oleaceae	Leaves are boiled in water and are then used to gargle for gingivitis. Leaf juice are then mixed with coconut flower juice and is dropped into the nose to treat nasal bleeding (Silja, Varma and Mohanan, 2008).
31.	<i>Lantena trifolia</i> L.	Verbanaceae	The leaves are macerated in approximately 500 ml. hot water and drink it regularly. This is used to treat Asthma, tonsillitis, etc (Asiimwe <i>et al.</i> , 2014).
32.	<i>Leucas aspera</i> Spreng	Lamiaceae	2-3 tender leaves and 2- black pepper is ground together and the extracted juice (2-3 drops) is put into the nose thrice a day for nose bleeding (Mohanty, 2015).
33.	<i>Nerium oleander</i> Sol.	Apocynaceae	Juice prepared from the stem bark is boiled with gingelly oil and two drops are poured into ear to treat ear pain (Muthu, Ayyanar, Raja and Ignacimuthu, 2006).
34.	<i>Ocimum basilicum</i> L.	Lamiaceae	The leaves are squeezed and the juice is dropped into the ear. One drop is applied twice daily. The leaves juice is used to treat ear ache (Idu <i>et al.</i> , 2009; Bose <i>et al.</i> , 2015).
35.	<i>Ocimum gratissimum</i> L.	Lamiaceae	Fresh leaves are used to stop nasal bleeding. The leaves are squeezed and the juice from it is dropped into the nostrils. One drop is applied twice daily, (Idu M. <i>et.al.</i> 2009).
36.	<i>Polytricum juniperinum</i> Hewd.	Polytricaceae	The whole plant is crushed or grounded into paste and are applied on the nose to stop it from bleeding (Lokho, 2012).
37.	<i>Piper longum</i> L.	Piperaceae	Piece of sugar cubes along with a long pepper is kept in mouth and sucked slowly to cure throat infection (Mohanty, 2015).
38.	<i>Psidium guajava</i> Linn.	Myrtaceae	The decoction of leaves is used to treat sore throat and ear infection. The leaves are boiled in water until it becomes concentrated liquor. Then the liquor is used for gargling to treat sore throat. The liquor is also used to treat ear infection (Kumar, 2012).
39.	<i>Salvia microphylla</i> Kunth.	Labiatae	Leaves can be taken as boiled or they can be chewed raw. Sage tea is taken orally to cure sore throat and leaves are also chewed to relieve throat infections (Dyubeni and Buwa, 2012).
40.	<i>Sansevieria roxburghiana</i> Schult.f.	Liliaceae	Leaves of the plant are used for the treatment of ear pain. Leaves are heated and the warm juice is squeezed onto the affected area (Prakash <i>et al.</i> , 2006).
41.	<i>Sansevieria aethiopica</i> Thunb.	Asparagaceae	Leaf sap is squeezed and the extract is used drop wise into the painful ear to treat ear ache (Takawira-Nyanya and Stedje, 2011).
42.	<i>Shorea robusta</i> Gaertn.	Dipterocarpaceae	Stem is grinded into juice. Then the juice is filtered and the filtered stem juice is used to treat ear ache (Mohanty, 2015).
43.	<i>Sida acuta</i> Burm.	Malvaceae	Leaves are used to treat nose bleeding. Leaves are squeezed and placed at the nostril. The squeezed leaves with the juice are put at the nostril to stop nasal bleeding (Idu <i>et al.</i> , 2009).
44.	<i>Solanum incanum</i> L.	Solanaceae	The roots are cut into small pieces. The roots are then chewed properly to treat throat infections (Kiringe, 2005).
45.	<i>Terminalia arjuna</i> Wright and Arn.	Combretaceae	The juice is extracted from barks and leaves. Then the extracted juice is applied drop wise to the infected ear (Aneja, Sharma & Joshi, 2012).
46.	<i>Tulbaghia violacea</i> Harv.	Alliaceae	Fresh bulbs are boiled. The decoctions are taken orally to treat throat infections. Leaves, stems and roots are boiled. Taken orally and steam from the boiling leaves is inhaled (Dyubeni and Buwa, 2012).

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47.	<i>Vitex negundo</i> L.	Verbanaceae	Whole plant is grinded and juice is extracted from it. A drink is prepared by mixing of the plant juice and water. These mixture is used dropwise to treat earache (Bora and Das, 2015).
48.	<i>Viburnum foetidum</i> Wallich.	Adoxaceae	A handful of fresh leaves are boiled with little water and the concentrated mixture/ decoction or few fresh leaves are crush and the squeeze juice is used as an ear drops (Lokho A).
49.	<i>Warburgia ugandensis</i> Sprague	Canellaceae	The bark of the plant is dried and the inner part is removed. Then it is mixed or soaked with water. After sometime it is sieved and mixed with honey. This will treat throat infection (Kiringe, 2005)
50.	<i>Zantedeschia aethiopica</i> L.	Araceae	Rhizomes are dried and ground to fine powder and then mixed with water. The drug is then administered by gargling to treat throat infections (Dyubeni and Buwa, 2012).
51.	<i>Zanthoxylum chalybeum</i> Engl.	Rutaceae	The sap of the plant is taken out and taken it directly to treat throat infection (Kiringe, 2005).

Conclusion

Ethnomedicinal plants have great potential to treat different kinds of ENT diseases. Compared with synthetic drugs, they have relatively low cost and can be very beneficial to general and poor people. In villages where medical facilities are inadequate, the traditional healers play a great role by using ethno medicines for the treatment of various types of ENT diseases. Today, the various Indigenous Knowledge traditions are not only for the cultures, from which they evolve, but also for the scientists, planners, researchers, etc., all are striving to improve the conditions of the rural/traditional areas as well as utilizing their knowledge for the betterment of mankind. Conservation of the ethnomedicinal plants and the indigenous knowledge of plants used in traditional health care are very important. In this respect, documenting each expression of the oral tradition and storing them for proper scientific studies is utmost important.

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