REVIEW ARTICLE

Role of diet, lifestyle and Yoga in the prevention and management of respiratory illnesses in children

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ABSTRACT:

Acute respiratory infection is the biggest cause for mortality among children aged less than 5 years, especially in developing countries. A community-based survey study showed that prevalence of respiratory infections was found to be 63.7% and 53.7% in urban and rural areas respectively. Respiratory infections account for 40% of child mortality globally. Burden of acute respiratory infection is increasing day by day due to the growing trend of modernization and urbanization. Overcrowding, repeated exposure to several allergens, poor nutrition are the other major etiological factors in the development of respiratory illness. After Corona virus 2019 (Covid-19) pandemic, the number of cases rose to millions and several countries across the globe were impacted severely.

Ayurveda is a holistic science which aims at health protection, promotion and strengthening immunity to overcome diseased condition. Diet and lifestyle modification, Yogic methods like Asana, Pranayama and Neti improve respiratory health by cleansing airways, strengthening respiratory muscles, enhancing lung capacity and tissue oxygenation. Assessment of Prakriti, cause behind the illness, treating the existing morbidity, Rasayana prayoga, following necessary precautions and using certain home remedies at an early stage are important to maintain respiratory as well as overall health.

This paper highlights preventive modalities in every level of health condition, both physical and mental, stressing especially on diet and lifestyle practices of a child.

Keywords: Respiratory infections, Diet and lifestyle, Yoga and Pranayama

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INTRODUCTION:

Major cause for respiratory illness in children is infection. Acute respiratory infection is the biggest cause for mortality among children aged less than 5 years, especially in developing countries like India. A community-based survey study showed that prevalence of respiratory infections was found to be 63.7% and 53.7% in urban and rural areas respectively. Respiratory infections account for 40% of child mortality globally. After Corona virus 2019 (Covid-19) pandemic, the number of cases rose to millions and several countries across the globe were impacted severely. In India, 3,13,41,507 cases and 4,20,196 deaths were reported until July 2021.

Burden of acute respiratory infection is increasing day by day due to the growing trend of modernization and urbanization. Overcrowding and poor housing condition, repeated exposure to several allergens, poor nutrition, birth weight, low socioeconomic status, parental smoking are the other major etiological factors in the development of respiratory illness. Respiratory illnesses have been influenced greatly by the seasons and changing climatic conditions.

Ayurveda is a holistic science which aims at health protection, promotion and strengthening immunity to overcome a disease condition. Diet and lifestyle modification has a significant role in the prevention and management of respiratory illness. Yogic methods like Asana, Pranayama and Neti improve respiratory health by cleansing airways, strengthening respiratory muscles, enhancing lung capacity and tissue oxygenation. Assessment of prakriti (nature of person), cause behind the illness, treating the existing morbidity, Rasayana prayahya (use of drugs with rejuvenation capacity), following necessary precautions and using certain home remedies at an early stage are important to maintain respiratory as well as overall health.

Pre Conception Care:

‘Shreyasi Prajaa’ (Healthy progeny) can be obtained by improving the quality of sperm and ovum of the couple. The couple should undergo Snehana (Oleation), Swedana (Sudation), Samshodhana (Detoxification) and Samsarjana karma (Diet regimen) prior conception. Then consume Rasayana (Rejuvenative) - Vajikarana (Affrodisiac) drugs; like-Madhurushadha siddha Ksheera-Ghrita (Medicated milk and ghee) for male partner and Taila-Masha (Sesame oil, blackgram) for female partner.

Switching to fertility diet, regular exercise, mental well-being, maintaining optimum weight and conceiving at right age are important for healthy conception. Fertility diet includes- Protein rich food (beans, lean meats, low fat dairy products), vitamin (whole grains, fruits, vegetables), multivitamin supplements, omega-3 (salmon, tuna, egg), antioxidants (fruits- berries, vegetables, kidney beans), olive oil.

Antenatal Care:

The pregnant mother who desires for a healthy and good-looking child should withdraw herself from all Ahitakara Ahara Vihara (non-congenial diet and habits); and maintain her health by following healthy regimen. Garbhini paricharya (antenatal regimen) explains this in detail. Sarpi (ghee), Paya (milk), Mamsarasa (meat soup), Madhura dravya (anabolic food) Shashthika Shali (rice), Yava (barley), Vidarigandha (Desmodium) and Gokshura (Tribulus terrestris) are said to be wholesome during second trimester of pregnancy. While discussing on mental health Acharya Charaka tells ‘Soumanasayam garbhadhaaranaanaam’ (cheerfulness - supports pregnancy).

To avoid smoking (active and passive), alcohol and caffeine consumption, frequent long journeys, exposure to allergens, environmental or industrial toxins are important for maintaining respiratory health of both mother and child.

Postnatal Care:

Neonatal resuscitation, umbilical cord care, antiseptic care, B.C.G. vaccination should be given to the newborn. Breastfeeding should be done at least up to 1 year of age, as breast milk contains all essential nutrients and immunoglobulins which nourish the child. The mother or caretaker (Dhatri) should be free from ailments like airborne diseases (Tuberculosis, Bronchitis, Asthma etc.), STDs (AIDS, Gonorrhea etc.), skin diseases (Psoriasis, Eczema etc.) and psychological illnesses (Anxiety, Depression). They shouldn't have any addictions like smoking or alcoholism. Avoid exposure to irritants and overcrowding. Ayurvedic interventions
like Swarna prashana, Medhya Rasayana (Pippali, Yashtimadhu, Vacha, Haridra etc) aid intellectual growth and prevent respiratory disorders.

In case of any disorder, the drugs can be administered to the lactating mother internally. Also, paste of drugs can be made and applied to the nipple and areola of mother's breast and kept for 1 muhurta (48min); then it is washed and breastfeeding must be done\(^7\). These drugs can be chosen seasonally and can be used in the form of Ahara (food) and Oushadha (medicine).

**Diet:**

Children those who are 2 years and above - should be given congenial food by considering desha, kala, prakriti (place, season, inbuilt nature). Madhura (sweet), Mrdhu (soft), Suraabh (aromatic), Laghuv (light for digestion), Sheeta (Cooling nature), Hridya (favourite) food articles are said to be Satmya (congenial) for children\(^7\).

Food articles explained under ‘Nitya Sevaniya Dravya’ (wholesome to be used daily) are beneficial in maintaining existing health condition and also prevent Ajaata Vikara (unmanifested diseases)\(^8\). They fulfill the criteria of balanced diet, as they cover all the components of nutrition as per their daily requirement. Antioxidant rich foods such as Amalaki (Indian Gooseberry) and Madhu (honey) give protection against respiratory infections. Intake of adequate fluids (fruit juices, herbal decoctions, clear soups, warm water) and hot-mild spicy food is good for respiratory health. Food categories mentioned in ‘fertility diet’ are suitable even for children. Vegetables and fruits which are rich in carotenoids, iron, potassium, selenium, calcium and Vitamin-C & E should be given. Dishes prepared by fermenting rice and cereals will enhance Vitamin-C and increase digestive power. Leafy vegetables should not be overcooked. Steam cooked food will retain most of the nutrients and they are light for digestion. Deep fried food under high temperature will produce chemicals like peroxides, ketones, aldehydes etc. that are toxic for lungs\(^9\). Reheated, deep fried and cold food items should be avoided.

**Lifestyle:**

Waking up at early morning (Brahma muhurta – 50 min before sunrise) is a healthy practice after an age of 10-12 years. After waking up in the morning, drinking 100-150ml of hot water (Ushapana) prevents systemic illnesses in long run. The drugs such as Arjuna (Terminalia arjuna), Nyagrodha (Ficus bengalensis) etc. should be used for Dhanta dhavana (teeth cleansing) and Jihva nirlekhana (tongue cleansing). Nasya karma (nasal drops) is indicated during childhood. Acharya Kashyapa advises the use of Stiyya (breastmilk), Katu taila (mustard oil), Ghrita with Saindhava lavana (Ghee with rocksalt) for Nasya in children\(^11\). Mukha sweda (steam inhalation), Dhunapan (herbal smoke inhalation) help in keeping nasal passage and airways clear. Basti karma (enema) can be done during Varsha ritu (rainy season) to control the aggravated Vata dosha; as Basti is not contraindicated for children. In case of Vataja disorders Basti is the best line of treatment\(^12\).

Use of cap and face mask, humidifiers and frequent handwashing should be done. Avoid exposure to rain, dew, irritant chemicals and polluted environment.

**Yogic approach:**

**Asanas:**

Hasta utthanasana (raised arms pose), Ashwa sancharanasana (riding horse pose), Anjaneyasana (crescent moon pose), Vipareeta Veevabhadrasana (reverse warrior pose), Chakrasana (wheel pose), Ushtrasana (camel pose), Supta vajrasana (reclined thunderbolt pose), Setubandhasana (bridge pose), Matsyasana (fish pose), Dhamurasana (bow pose), Yogamurasana (Psychic union pose), Bhunamansasana (greeting the Earth pose), Chamatkarasana (wild thing pose), Urdhwamukha shwanasana (upward facing dog pose), Bhujangasana (cobra pose) improve the health of respiratory system. They are used therapeutically in curing respiratory ailments such as cough, cold, sinusitis, bronchitis, asthma, allergies and chronic obstructive pulmonary disease (COPD).

**Pranayama:**

Nadishodhana Pranayama, Bhasrika Pranayama, Suryabhedana Pranayama, Bird Pranayama, Kaya kriya, Yogic breathing and Tiger breathing are beneficial in the prevention and management of many respiratory problems by increasing lung capacity and improving tissue oxygenation.

**Jala Neti:**

This is one among Shatkarma (6 methods) of Hathayoga practice which is a purificatory process of
upper respiratory tract. Daily practice of neti helps to prevent rhinitis, sinusitis, allergies, asthma, sore throat, tonsils and dry coughs\textsuperscript{13}. Jalaneeti can be practiced by adolescents under the guidance of an expert trainer.

**Home remedies:**

Guggulu (Commiphora mukul), Pippali (Piper longum), Shunthi (Zingiber officinale), Maricha (Piper nigrum), Karpoora valli (Plectranthus amboinicus), Nagavalli (Piper betle), Tilasi (Ocimum sanctum), Haridra (Curcuma longa) are some of the common drugs available easily which are anti-inflammatory, immune-modulatory, expectorant and antioxidant in action. Traditional use of these medicinal herbs cures mild symptoms like cough, cold, headache and congestion. Example: Turmeric milk/golden milk.

**DISCUSSION**

The Prakriti (inbuilt nature) of the foetus depends upon the dosha predominance of beej (sperm-ovum) of the parents at the time of conception. Healthy male and female gametes only can produce healthy progeny. Those food and drinks which are consumed by the pregnant woman, same become satmya (congenital) to the foetus\textsuperscript{14}. All the organs in foetus are well formed during second trimester and especially Mantra Bhava (maternal component) is mainly responsible for the development of lungs and respiratory muscles.

Ghee and Madhura dravya have anabolic effect and they pacify Pitta and Kapha dosha. Milk is the whole food and contains all essential nutrients necessary for the growth of the foetus. Meat which is rich in protein supports muscle tissue growth, which is essential for respiratory system. Gokshura and Yava act as diuretics and prevent excessive fluid retention in mother's body, indirectly which prevents Kapha/Kleda janya vikara (edematous/exudation) in child. Madhurushadha siddha ksheera-sarpi (medicated milk and ghee) prevent emaciation and protect child against malnutrition disorders. They reduce the risk of preterm birth and underweight. Vidaarigandha is Sarvadosahara (pacifies all doshas). These food articles improve Vyadhikshamatva (immunity boosters) and shield the child from various infections.

After birth child should be provided with proper parental care, nutrition, hygiene, good housing condition and protection against infectious disorders. Resuscitation techniques are important in keeping the contour of airways and they prevent secondary infections of respiratory system.

The mother/care taker should be healthy as their health condition directly impacts the child. Drugs consumption may affect the health of the child as the chemical contents of which can pass through breast milk. They should have good knowledge of sanitation of food, water, kitchen, eating places, house and environment.

Overcrowding is the cause of several airborne respiratory infections. Residence should have good ventilation facility and adequate space. Immunization against infectious diseases, proper weaning techniques, food fortification has got important role in the healthy development of a child. Swarna yogas (gold preparations) and ghee do have promising outcome in improving both mental and physical development of a child.

If the child is disease free, then he should follow Aroga vrittta (Swasthavrittta/ healthy regimen) in order to preserve his existing health condition\textsuperscript{15}. Those items which are of opposite qualities (other than Madhura, Mridu etc) if become congenial due to continuous intake, even then it is considered as unwholesome and should be withdrawn slowly by gradual introduction of wholesome diet. Nutrient rich foods have anti-inflammatory and antioxidant effects, which can reduce lung inflammation and promote overall health. Spices and condiments which are commonly used in kitchen have excellent Kaphahara (decreasing phlegm) property and their seasonal use help to adapt to the changing climatic conditions. Using hot and spicy foods help to break the phlegm and reduce congestion.

Nascent oxygen will be in higher concentration in the atmosphere during early morning hours (5:00AM-6:00AM) and this enhances tissue oxygenation. It helps in the prevention of various lung disorders. As children are accustomed to sweet and unctuous food, chances of getting Kaphaja disorders are high during childhood. Hence it is ideal to introduce those regimens which pacify Kapha dosha. They maintain homeostasis of doshas and prevent the diseases. Ushapana with hot water decreases the accumulation of Kapha and improves metabolism. The drugs used for brushing teeth and cleansing tongue do have
kashaya rasa (astringent taste) and have kapha chedana (clearing phlegm) property. They maintain oral hygiene and impart freshness of breath. Using face masks prevents cold air from entering lungs, as it can aggravate respiratory symptoms. Warm and moist air from humidifiers help in relieving cough, loosen phlegm in airways and enables expectoration.

Nasya is very effective in relieving the Kapha (phlegm) accumulated in upper respiratory tract and helps in the paaka (liquefaction) of morbid Kapha dosha in the channels. The Pharmacodynamic action of Basti karma has systemic effects and benefits for long term. Thus, it can be used as both preventive and curative procedure.

The chest opener series of Asanas help in improving inhalation and exhalation process, strengthen respiratory muscles, enhance lung capacity by stretching intercostal muscles and ribcage. They improve oxygen uptake capacity and improve vitality of body systems.

In Yogic breathing during inhalation diaphragm contracts by pulling down the lungs and creating vacuum, which allows atmospheric air to rush into the lungs through nose. This induces optimum volume of oxygen to enter into the lungs. During exhalation diaphragm relaxes by pushing lungs upward and forces air out, which expels maximum amount of carbon dioxide. Nadishodhana Pranayama balances energy flow in both hemispheres of the brain and also clears mild blockades of nose. Bhastrika Pranayama helps in eliminating the mucus accumulation in the nasal passages and increases oxygen supply to vital organs. Suryabhedana Pranayama cleans frontal sinuses and cures cough, cold and asthma. Bird Pranayama improves lung capacity and facilitates gas exchange process as it involves holding of breath. Tiger breathing involves a chest opener posture and helps in deep breathing.

Julaneti maintains the nasal hygiene by removing the dirt, bacteria and allergens trapped along with the mucus in the nostrils. It makes breathing clear and cleanses sinuses. It helps to improve the sense of smell, prevents eye and ear disorders. It has positive benefits on nervous system and mind.

CONCLUSION:
Ayurveda is a holistic science which aims at health protection, promotion and strengthening immunity to overcome a disease condition. Following healthy diet, lifestyle and adopting Yogic practices improve physical, mental and spiritual components of health. Using certain home remedies at an early stage is important in halting the progress of disease and they are very useful for neonates and pregnant women who are very delicate to follow treatment methods. Food, lifestyle and medicine should improve the strength and immunity so that it accounts for the wellness of entire community. Control of respiratory problems at an early age of life is crucial for deciding the quality of life led by that person in his adulthood.

Acharya Charaka rightly quotes that: “Just as a tender plant is easy to cut down, the same requires much more effort when fully grown. Likewise, any disease is manageable in the early stage; it becomes almost incurable when it grows”[16]. Similarly, it is very important to prevent and manage any disease in the young age itself in order to lead a long, healthy life in future. Thus, looking after health today gives a better hope for tomorrow.

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REFERENCES:


11. Prof. (Km.) P.V. Tewari, Editor. Kashyapa Samhita by Acharya Vriddha Jivaka, redacted by Vatsya, Varanasi: Chaukhambha Visvabharati; Reprint 2018. p.293

12. Prof. (Km.) P.V. Tewari, Editor. Kashyapa Samhita by Acharya Vriddha Jivaka, redacted by Vatsya, Varanasi: Chaukhambha Visvabharati; Reprint 2018. p.258


14. Prof. (Km.) P.V. Tewari, Editor. Kashyapa Samhita by Acharya Vriddha Jivaka, redacted by Vatsya, Varanasi: Chaukhambha Visvabharati; Reprint 2018. p.3


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