WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 9, Issue 4, 592-597. Review Article ISSN 2277– 7105

MANAGEMENT OF RESPIRATORY DISORDERS IN CHILDREN

Semwal Aarti[1]*, Pandey Reena[2] and Seepal Shalinee[3]

[1]M.D. Scholar in Dept. of Kaumarbhritya at Rishikul Capmus, UAU, Haridwar, Uttarakhand, India.

[2]Prof. in Dept. of Kaumarbhritya at Rishikul Capmus, UAU, Haridwar, Uttarakhand, India.

[3]M.D. Scholar in Dept. of Stri Rog Evam Prasuti Tantra at Rishikul Capmus, UAU, Haridwar, Uttarakhand, India.

Article Received on
07 Feb. 2020,
Revised on 28 Feb. 2020,
Accepted on 19 March 2020,
DOI: 10.20959/wjpr20204-17149

***Corresponding Author**
Semwal Aarti
M.D. Scholar in Dept. of Kaumarbhritya at Rishikul Capmus, UAU, Haridwar, Uttarakhand, India.

ABSTRACT

Respiratory infections are the most frequently occuring illness in childhood. It is a leading cause of mortality in children below five years of age. A Preschool aged child has 6 -10 episodes and 10-15% of school aged child have at least 12 episodes per year. Due to specific anatomical and physiological peculiarities, immunological consideration and immature response, children become more susceptible to respiratory infections. In India about 26% cases of RTI were reported with an incidence rate of 2,173 case per lakh population. Early treatment is necessary because it may hamper the optimum growth and development of child. Ayurveda pathy gives a safe and effective formulation with fewer side effects. *Pushkarmuladi churna* mentioned in *BHAISHJYA RATNAWALI* under *Bal Rogadhikar***.** It contain *Pushkarmul, Ativisha, Karkatshringi, Pippli* and *Dhanvyas,* which acts on Respiratory System by their *Ushan, Laghu guna.*

KEYWORDS: Respiratory disorders, Children mortality, Ayurveda pathy, *Pushkarmuladi churna.*

INTRODUCTION

Respiratory disorders are the most frequently occurring illness in childhood. On average children acquire three to eight URI/year, whereas their parents experience two to four per year. RTI are the most common medical reason for school or work absenteeism.[1] A preschool-aged child has 6-10 episodes and 10-15% of school aged child have atleast 12

episodes per year.[2] It affects all age groups, all races and people from all geographical areas. Most RTI occurs frequently during the cold, winter month and seasonal variations. It is a clinical condition characterized by inflammation of respiratory tract resulting in dry/ wet cough with postnasal discharge, malaise, anorexia, sometimes associated with tonsillitis, adenitis, pharyngitis[3] and rise in temp. Respiratory disorders accounts for about 25% of all pediatric consultations and 10% of these are for asthma. The other main pediatric respiratory disorders are Upper tract infection, Pneumonitis, acute bronchitis and bronchiolitis.

RTI is a leading cause of mortality in children below five years of age. It contributes to 15-30% death in India and most of these deaths are preventable. In India, about 26% cases of RTI (URTI & LRTI) were reported, with an incidence rate of 2,173 cases per lakh population. Overall prevalence of RTI was observed to be 59% with prevalence in urban and rural area being 64% and 54% respectively.[4] Due to specific anatomical and physiological peculiarities, immunological considerations and immature response, children become more susceptible to respiratory infections. Although the illness is typically mild but has high incidence and transmission rate. it is also an economic burden for lower and middle class families especially in developing countries.

Cough is the common symptom of the respiratory disorder and also an important defense mechanism of the respiratory system and helps to bring out the infected secretions from the trachea and bronchi. Cough should not be suppressed in younger children as retention of secretions in their lung may result in atelectasis and pulmonary complications.[5]

Early treatment is necessary because it is a potential Nidanarthakar vyadhi to produce Kshya. Also it is important to treat any balaroga at the earliest as it may hamper the optimum growth and development of child. Persistent cough interferes with sleep and feeding. It fatigue the child and may result in vomiting.[5] Improper management or lack of proper care may lead to good number of complications that include LRTI.

Ayurveda is the major systems of indigenous medicines and as all of us know it is science of life. The ancient sages discovered different kinds of Ayurvedic medicines after continuous study, observations, evperiments, reflections, trials and judgements. Unlike many diseases, which can be attributed to the children, respiratory infection is an ancient illness. Kasa is a disease described in ayurvedic text that shows close resemblence with respiratory disorder on the basis of clinical manifestations. Ayurvedic medicines are used for the treatement of

disesase globally so that people all over the world can keep faith on it on the basis of scientific evidences. Ayurvedic drug include the respiratory tonics and naturally occurring bronchodilator and immune modulator.

Pushkarmuladi churna mentioned in *BHAISHJYA RATNAWALI* under *Bal Rogadhikar*.[6] It contain *Pushkarmul, Ativisha, Karkatshringi, Pippli* and *Dhanvyas*, which acts on Respiratory System by their following properties.

Pushkarmula

Inula racemosa commonly known as Pushkarmula is a indigenous system of medicine in India. Roots are bitter, acrid, thermogenic, aromatic, stimulant, antiseptic, alexipharmic, deodorant, anodyne, anti-inflammatory, digestive, carminative, stomachic, expectorant, broncho-dialator, uterine stimulant, emmenagogue, resolvent, febrifuge and tonic. They are useful in in vitiated condition of Kapha and vata. Useful in many conditions including inflammations, anorexia, hiccough, cough, cardiac and bronchial Asthma, Bronchitis, strangury, emaciation, anaemia and general debility. Charaka indicates this drug as the drug of choice in hikka, shwasa and parshwa soola.[7] The drug is found to have action on reducing acute asthmatic attacks. It has anti histaminic and a broncho dilatory action that makes it work in Shwasa roga. Inulin (10%), Aromatic oil (1.3%), Main alkaloid in oil is Alantolactone. ($C_{15}H_{20}O_2$; M.P-76º). Roots of Inula racemosa gave β-sitosterol, dancosterol, and iso-alantolactone. Alcoholic extract of root of Inula racemosa, was studied for its anti-allergic effect in experimental models of type I hypersensitivity, viz. egg albumin induced passive cutaneous anaphylaxis (PCA) and mast cell degranulation in albino rats. The seven days drug treatment schedule showed greater protection than disodium cromoglycate intraperitoneally. The results suggest that Inula racemosa possesses potent antiallergic properties in rats.[8] It is proved that this drug improves pulmonary functions as well as the general picture of the hematological values and effective in the treatment of chronic spasmodic bronchitis., It is a good drug of choice in avrita vata vikaras. By virtue of its Broncho dilating, spasmolytic effect it can be used in running nose, cases associated with asthma.

2. Ativisha.[9] – Ativisha or botanically Aconitum heterophylum is an important ayurvedic herb used in ayurvedic pediatric medicine. its roots are commonly used for fever management in infants and children. Ativisha has antipyretic, antibacterial, anthelmintic, antotussive, and anti- inflammatory actions. It helps in the treatement of bronchitis, persistant cough, Upper

respiratory tract infections, common flu and malaria. Ativisha roots contain active constituents like Atisine, Atisenol, Heteratisine, Hetidine which are responsible for its medicinal properties. Ativisha powder along with honey helps to clear the lungs, reduces inflammation and modulates the mucus secretions.

3. Karkatshringi[10] **–** It is herb which produces sringi (gall) which are produced by an insect Dasia asdifactor. These galls are packed with therapeutic properties and considered as tonic. Expectorant properties of this herb are quite effective to resolve the complications like cough, asthma, phthisis, fever, tuberculosis and irritability of stomach. This herb helps in clearance of mucus from airways, bronchi, lungs and trachea being bitter and pungent. Antimicrobial property of this herb are quite good to fight against viral, bacterial and fungal infections. Chemical composition has essential oils, resin, pistacienoic acids A and B, 3 – sitosterol, pistacin, pistacinin etc. This herb strengthens the respiratory membrane inner lining of the surface karkatshringi is known to be effective in the treatement of tuberculosis.

4. Pippali – Species of the genus Piper specially *longum* are among the important medicinal plant used in various system of medicine with chemical composition of 2-alkaloid piper longumine, piper longumine.characterised as N-(3, 4, 5,-Trimethoxyl cinnamoyl)--pipeeridin-2-1and isobeutalamide of piperic acid respectively (stem&roots), N-nonadecan, N-eaicosane, N- henicosane, K- thajene. Pharmacological Activity include Expectorant, Digestive, Carminative, Stimulant, Mild diuretic, Anthelmatic, Alterative tonic, Aphrodisiac, Bronchodilator, Respiratory tonic, Improves liver function, helps reduce body weight. Essential oil is Antibacterial, Antifungal, Anthelmatic, Antiinflammatory(rats), Respiratory stimulant (animals) root is stimulant; berries are Cardiac stimulant, Alterative, Laxative, Stomachic, and Antiseptic. Excellent medicine for cough, Asthma and Hiccough. An Expectorant and prevents the production of mala –Kapha, Obesity, Chronic Cold, Chronic Bronchitis, Cough, Chest infections, Congestion, Bronchial Asthma, Chronic Asthma. Isolated piperine showed a central stimulant action in frogs, mice, rats and dogs along with increased hypotonic response in mice. It antagonized respiratory depression induced by morphine or phenobarbitone in anaesthetized dogs.[11] The crude extract of P. longum as well as piplartine, one of its alkaloids, suppressed the ciliary movement of the frogs, which may be due to the suppression of cough reflex.[12]

5- Dhanvayas - Chemical composition contain Ceryl alcohol, β-cytosterol, alanine, arginine, glycine, isoleucine, leucine. It has diuretic and antiphylatic, cooling, purifier, laxative,

carminative, antipyretic and abortifacient properties. Alcoholic extract of F. cretica leaves possesses strong inhibitory potential against Salmonella typhi that is the causative agent of typhoid fever.[13] Anti-inflammatory activity of F. cretica was studied by ey al (2009) in rat hippocamoal slices that were subjected to ischaemic reperfusion injury. Aqueous extract of F. cretica is one of the seventeen ingredients in Normacid syrup used in the treatment of hyperacidity and gastritis, as inflammation of stomach is found to be the ultimate cause of gastritis.

CONCLUSION

Several sub-doshas of Vata and Kapha come into play when you investigate the area of respiratory immunity. Children are natural experts at making mucus, which serve them well in that it buffers their tissues being overly dry or irritated as they are growing rapidly, but it can also leave children more susceptible to respiratory disorder and infection of many varieties. Because kapha is systemically elevated in childhood, Ayurvedic drugs are excellent in clear excess kapha from the system by offering children supportive herbs in honey. They do a good job of keeping the airways open over time. It nourish the tissue that allowed the infection to take root and Support the immune system to prevent relapse.

REFERENCES

1. Nelson Textbook Of Pediatrics16th edition. edited by Behrman, Kliegman, Jenson, Chapter, 381: 1261.
2. https://Sciencedirect.com/topics/medicine/prevalence of URI.
3. The short Textbook of Pediatrics10th edition, edited by Suraj Gupte, 2004; Chapter 15: 249**.**
4. https://www.atmph./orgarticle.asp=1755.
5. Ghai essential pediatrics 6th edition, edited by o.p ghai, piyush gupta, v.k paul, revised reprint with corrections, 2005; chapter 14: 345.
6. Shri govind das- BHAISAJYARATNAVALI– Vidhyotaniteka edited by Shri Kaviraja Ambikadatta shastri Ayurvedacharya Chaukhambha Sanskrit sansthan, Varanashi, thirteen revised edition, 1997.71/75.
7. Srivastava et.al; Indian Journal of Physiology and Pharmacology, 1999 Apr; 43(2): 235-41.
8. Charak Samhita of Agnivesh, revised by Charak and Dridhbala, with introduction by Vaidhya Samrat Sri Satya Narayan Sastri with elaborated hindi commentry by Pt.

Kashinath Sastri with and Dr. Gorakha natha chaturvedi, editorial board Pt. Rajeswardatta Sastri, Part -2, Chaukhamba Bharti Academy Varanasi, Reprint 2012.

9. https://wwwayurtimes.com/ativisha-aconitum-heterophyllum.
10. https://wwwplanetayurveda.com/library/karkatshringi-pistacia-integerrima.
11. Singh N, Kulshrest VK, Shrivastav RK, kohli RP, Analeptic activity of some alkaloids, J Res Indian Med, 1973; 8(1): 1-3.
12. Banga SS, Garg LC, Atal CK, Effect of piplartin and crude extract of piper longum on ciliary movement, Indian J pharma, 1964; 26: 139-141.
13. Gehlot D and Bora A. Toxic effect of various plant extract on the causal organism of typhoid fever. Curr Sci, 2000; 78: 780-781.