



ISSN NO. 2320-5407

Journal homepage: <http://www.journalijar.com>

INTERNATIONAL JOURNAL
OF ADVANCED RESEARCH

RESEARCH ARTICLE

Prevalence of Bronchiolitis among children under five years of age in Mysore district, Karnataka. (Southern India)

Dr. Balachandra¹.H.M and Dr.Puttalingamma. V².

1.Child care and Immunization Center ,Kanthraj Urs Road ,lakshmi purm ,Mysore-570104.

2. Defence Food Research Laboratory,Mysore, Karnataka State,India-570011.

Manuscript Info

Manuscript History:

Received: 11 December 2014

Final Accepted: 25 January 2015

Published Online: February 2015

Key words:

allergies; bronchitis ;children;
epidemiology;respiratory symptoms.

*Corresponding Author

Dr.V.Puttalingamma

Abstract

Background: The unknown frequency of Bronchitis, asthma and other common allergic diseases in children living Mysore. Respiratory infection and pneumonia are still the leading cause of childhood mortality in the world. The objective of this study was to estimate the prevalence of allergic diseases,this bronchitis and major allergic in children of the Mysore, Karnataka and to examine their Disease , socioeconomic status, and environmental correlation,nutritional status

Methods: A search of articles published on bronchiolitis was performed using PubMed. The areas of focus were diagnosis, treatment and prevention of bronchiolitis in children.

Results and Conclusions: Supportive care Mysore district Mysore and Nanjangud , taluk to cause chronic bronchitis are presented in Table-1& fig-6.

Copy Right, IJAR, 2015,. All rights reserved

INTRODUCTION

Bronchitis is an inflammation of the mucous membrane of the bronchi (the larger and medium-sized airways that carry airflow from the trachea into the more distal parts of the lung parenchyma). Bronchitis can be divided into two categories: acute and chronic.(Mayo Clinic Staff (2011). "Bronchitis: Treatment and drugs". Mayo Clinic Staff. 2012).Domestic cooking fuels are one of the important causes of indoor air pollution particularly in rural area in India. Basically they are agriculturist and house holds use solid fuel as the main domestic source of energy. Most of the houses are not having proper ventilation for smoke and hence its impact on RS in children.

Acute bronchitis is an inflammation of the bronchi usually caused by viruses or bacteria. Acute bronchitis is an acute illness lasting less than three weeks with coughing as the main symptom, and at least one other lower respiratory tract symptom such as wheezing, sputum production, or chest pain. Acute bronchitis is acute infection of the bronchial mucosa, without obstruction. (Fig-2)

Bronchopneumonia

Bronchopneumonia is a possible course of a complicated bronchitis. Whereas a primary

Pneumonia normally is localized to one segment or lobe of the lung, in bronchopneumonia there is a disseminated inflammation from the bronchi down to the alveoli. The coughing, which is a common symptom of acute bronchitis, develops in an attempt to expel the excess mucus from the respiratory tract. Other common symptoms of acute bronchitis include: sore throat, shortness of breath, fatigue, runny nose, nasal congestion (coryza), low-grade fever, pleurisy, malaise, and the production of sputum. (Albert, RH (Dec, 2010), PMID 21121518., U.S. National Library of Medicine (2012)., BMJ Evidence Centre (2012)., BMJ Publishing Group. 2013, Christian Peiser . Welliver, Robert C. (2003).



Fig-3

Material and methods :-

A search of articles published on Brachitis and bronchiolitis was performed using PubMed. The areas of focus were diagnosis, treatment and prevention of bronchiolitis in children.

Clinical manifestation

- Dry, hacking, unproductive cough
- within 4-5 days the cough becomes productive
- often preceded by an upper respiratory tract infection
- afebrile patient or low grade fever
- auscultation – rough high pitched rhonchi

Refer to hospital

- Presence of general danger signs
- Fever $> 39^{\circ}\text{C}$ resistant to antipyretic treatment
- Acute respiratory distress and cardiac failure
- Chronic cough > 30 days duration
- Hemoptysis

Clinical features of bronchiolitis.

- Nasal obstruction, rhinorrhoea and irritating cough are noticed first.
- After 1-3 days there follows increasing tachypnoea and respiratory distress. The chest is often hyperinflated.
- Auscultatory signs are very variable; fine inspiratory crackles are often heard early, becoming coarser during recovery; expiratory wheeze is often present with prolonged expiration.
- Respiratory distress may be mild, moderate or severe.

- Fever of 38.5 C or greater is seen in about 50% of infants with bronchiolitis.
- Apnea may be the presenting feature, especially in very young, premature or low-birth weight infants.

Cause of Wheezing

1. Not from obstruction of small airways – Surface area too large
2. From increased intra thoracic pressure + decreased large airway pressure = vibration of airway wall in large airways (Generations 1-5)

Treatment:-

- Oxygen administration to combat hypoxia and to lessen the respiratory effort.
- Hydration, if possible by oral fluids and Breast feeds through I V, fluids if necessary
- Take care of nutrition

Nasal Decongestion:-Saline nasal drops and cleaning of nostrils by gentle suction may help to relieve nasal block, before feeding may be helpful. Parents should be educated about instilling saline drops and cleaning secretions from nose before discharge from hospital.(Steiner. et al,2004).

Steam inhalation:-Steam inhalation/ mist inhalation has been proposed to improve airway clearance of mucus and outcome of acute bronchiolitis. It is less expensive , simple and easily available, steam was considered to be a suitable intervention in poor low income countries.

Fig-4



Case study:- Table -1 and fig-6 are presented.



fig-2

Mucolytic

Mucolytic respective secretolytic drugs are expectorants. In contrast to secretomotoric drugs, which increase the activity of the ciliated epithelium, expectorants should cause a liquefaction of the bronchial mucus to make it easier to cough it up. Among the mucolytics are acetylcysteine, bromhexin and ambroxol. Acetylcysteine cleaves the disulfide bonds of the mucopolysaccharides. Bromhexin activates enzymes, which cleave the molecules of the mucus and stimulate the glandular cells to increase the mucus production, reduce the viscosity. Ambroxol is a metabolite of bromhexin. In addition to the effects of bromhexin, it stimulates the synthesis of surfactant. (Fig-3,4,5.)

RESULTS:

Cases received across ten Districts and taluk places ie., Mysore, Suthure, Nanjangud, Chamaraja nagar, H.D Kote, Sriranga patina, Narsipura, Pandavapura, Both urban and rural clusters were covered.

Socio-economic status :-The subjects were grouped as belong to low, middle or high socio-Economic status based on interview perception. Most individuals in rural areas had a low socioeconomic status and most individual in urban areas had a medium socioeconomic status.

Respiratory viruses – parainfluenza, adenoviruses, Rarely Pneumococci,

H. influenzae, Staphylococci and Streptococci may be isolated from the sputum. Acute respiratory infections (ARI) in children less than five years old are the leading cause of childhood mortality in the world. Most of these deaths are caused by pneumonia and bronchiolitis. (Pickering LK, ed. 2000) WHO estimated that the annual number of ARI-related deaths in this age group (excluding those caused by measles and pertussis and neonatal deaths) was 2.1 million, accounting for about 20% of all childhood deaths. (Igor Rudan, et al, 2004). Case records over a period of 3 years from 2012-2014 were reviewed and diagnosed chronic 2179-cases.

Fig-1

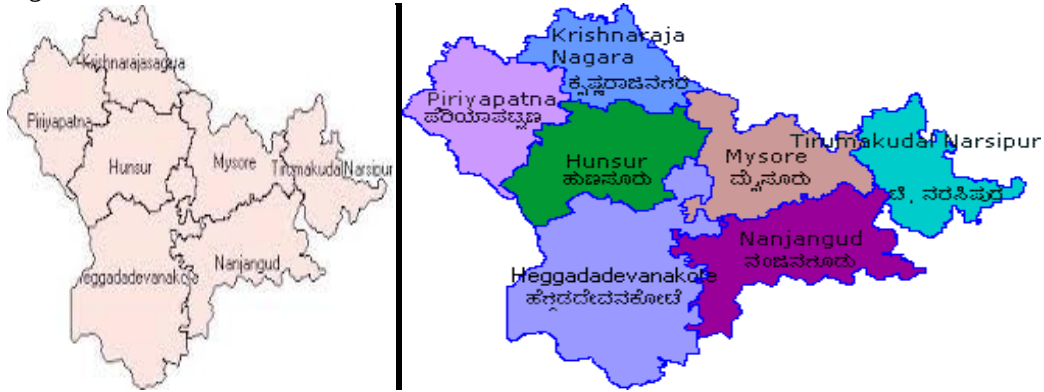
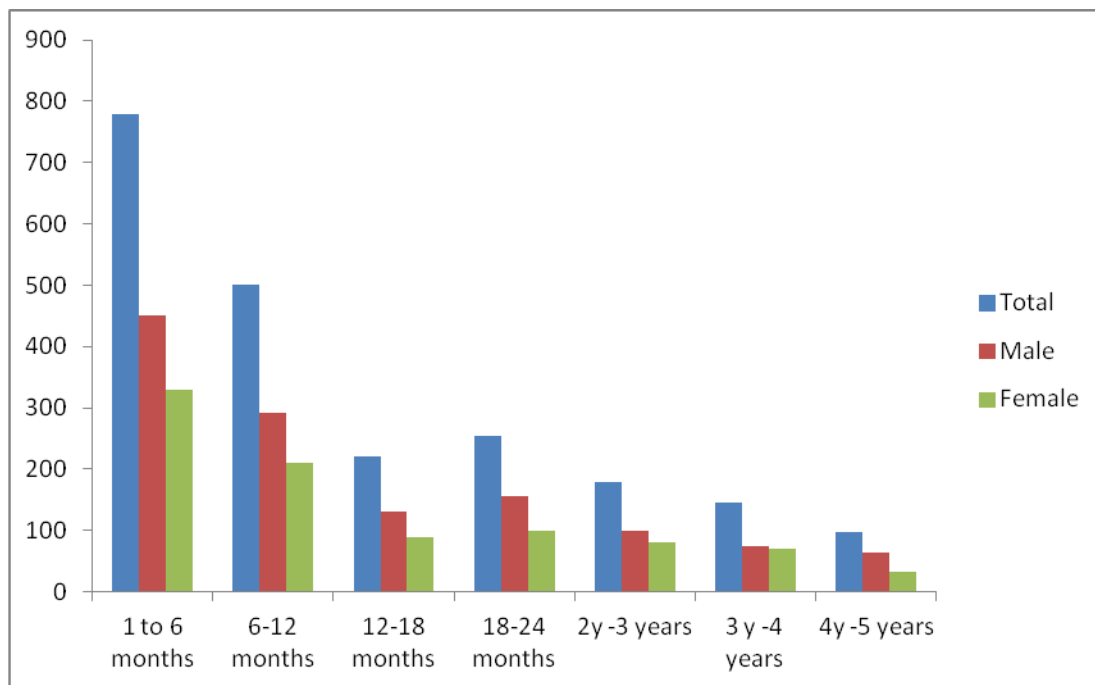


Fig-5

**Table :1. Case study with different age groups.**

S No	Age	Total	Male	Female
1	1 to 6 months	780	450	330
2	6-12 months	501	291	210
3	12-18 months	220	130	090
4	18-24 months	255	155	100
5	2y -3 years	180	099	081
6	3 y -4 years	145	075	070
7	4y -5 years	098	065	033

Fig-6, Case study with different age groups**Who can get bronchiolitis?**

- Children under 2 years of age can get bronchiolitis. It is most common in 6-month-old infants.
- It is more common in males.
- Infants who are around cigarette smoke or who attend daycare are more likely to get it.
- Infections are most common in the winter and early spring.
- Children who have bronchiolitis 2 or 3 times are more likely to have developed asthma in later life.

What are the symptoms of bronchiolitis?

- The early symptoms are usually like a cold: stuffy nose, runny nose, and mild cough. These last for 1-2 days.
- Cough, fast breathing, and wheezing usually follow.
- The child's neck and chest may suck in with each breath.
- Child may have fever.
- Children who have respiratory distress may get very tired or become dehydrated (not enough fluid in body).

Is bronchiolitis contagious?

- Bronchiolitis is contagious, because it is always viral.
- It can be spread by sneezing and coughing.
- It can also be spread when the hands touch the mouth or nose after coming into contact with germs.

Conclusion : 20 to 25 children's from rural area, brought to the clinic daily for various health problems, Out of which , nearly 10-12 children's were suffering from Bronchitis as well as bronchiolitis 50 % of the parents are from lower middle class and most of them are uneducated, doing daily wages work for their livelihood. According to Women and child welfare dept survey report (Vijayavani 16.10.2014 , p 5B) mysore has the highest malnutrition cases and as well as Nanjanagudu. Bronchiolitis is the most common lower respiratory tract infection in children .Most cases occur between late autumn and early spring. Some children reported with the occurrence of repeated bronchitis. Acute asthma, associated with viral lower respiratory infection, pneumonia, congestive heart failure, pertussis, pneumothorax, bronchial foreign body. Based on the current evidence it is not easy to decide about bronchodilator uses. It is also difficult to distinguish bronchiolitis from viral infection associated wheezing or multi-trigger wheeze. (Nishanth Verma *et al.* 2013). Low socio-economic status poorly ventilated rooms, location of the kitchen, ventilation and associated respiratory symptoms during cooking are likely to be important contributors. A number of other conditions may share some presenting features with viral bronchiolitis. These conditions can usually be excluded via an accurate history, a thorough physical examination and, where indicated, chest X-ray. Prevention of cross-infection- cross-infection is common, serious and largely preventable.

Most people of Karnataka are agriculturists, using fire hood for their day today life, which emits smoke inside the house. Due to this, young children and aged people will become pray for respiratory infection often. Indoor air pollution is a major global public health threat requiring greatly increased efforts in the areas of research and policy-making. Research on its health effects should be strengthened, particularly in relation to acute lower respiratory infections. Among indoor allergens, house mite excreta and excreta of cockroaches are well known. In rural dwelling, cattle dung as a potent allergen has been established in recent studies.

For a Doctors as well as pediatricians, children with bronchitis are part of their daily work. Almost all infants and younger school children become sick several times a year with bronchitis for various reasons. That bronchitis occurs much more frequently in winter than in summer, the cold air outside and the dry heated air indoors, increases the vulnerability of the mucosa for pathogens. Depending on family history of bronchial asthma and allergies, the risk may be increased many times over. The health damage due to exposure to tobacco smoke is a major point which should not be underestimated.

References:

1. Albert, RH (2010). "Diagnosis and treatment of acute bronchitis". American Family Physician **82** (11): 1345–1350.
2. Pickering LK, ed. (2000). American Academy of Pediatrics. (Bronchiolitis). In Red Book: Report of the Committee on Infectious Diseases. 25th ed. Elk Grove Village, IL:
3. Cherian T, Simoes EA, Steinhoff MC, Chitra K, John M, Raghupathy P., (1990). Bronchiolitis in tropical South India. Am J Dis Child. ;144:1026-30.
4. Christian Peiser. (2013). "Definition". Acute bronchitis Basics. BMJ Publishing Group. Retrieved 6, Bronchitis in Children ,Charité. Department for Pediatric Pneumology and Immunology, Medical University
5. Eber E. (2011). Treatment of acute viral bronchiolitis. Open Microbiol J. ;5:159-64.
6. Liet JM, Ducruet T, Gupta V, Cambonie G. (2010). Heliox inhalation therapy for bronchiolitis in infants. Cochrane Database Syst Rev. ;4:CD006915.
7. Mayo Clinic Staff (2011). "Bronchitis: Treatment and drugs".
8. Mayo Clinic Staff. Retrieved 27 December 2012.).
9. Murray CJL, Lopez AD, Mathers CD, Stein C. (2000). The global burden of disease **2000** project: aims, methods and data sources. Geneva: World Health Organization; 2001. (Global Programme on Evidence for Health Policy, Discussion Paper No. 36,
10. NISHANTH VERMA., RAKESH LODHA., S K KABRA. (2013). Recent Advances in Management of Bronchiolitis, Review INDIAN PEDIATRICS. VOLUME 50 OCTOBER, 15, .p 939-949.
11. PMID 21121518, U.S. National Library of Medicine (2012). "Bronchitis-acute". National Institutes of Health. Retrieved 27 December 2012., BMJ Evidence Centre (2012).
12. Steiner RWP. (2004). Treating acute bronchiolitis associated with RSV. Am Family Physician. ;69:325-30.
13. Vijayavani , Daily News Paper, karnataka, 16.10.2014 , p 5B.
14. Voets, (2006). *et al.* Eur J Emerg Med ;13:134).
15. Welliver, Robert C. (2003). Review of epidemiology and clinical risk factors for severe respiratory syncytial virus (RSV) infection. J Pediatr 143:S112-S117.

