### **INFECTIOUS DISEASES - II**

# ACUTE VIRAL RESPIRATORY ILLNESSES

# \*Sasidaran Kandasamy \*\*Viswateja Chitturi \*\*\*Balaji Sridharan

**Abstract:** Acute respiratory illness by viruses is a major cause of morbidity and mortality in children. A systematic approach is necessary to diagnose, treat and control the disease and also to prevent inadvertent use of antibiotics. This review article discusses the epidemiology, clinical features, management and prevention of viral respiratory illnesses among children in developing countries with particular emphasis on influenza and respiratory syncytial virus.

**Keywords:** Acute respiratory illness, Influenza, Respiratory syncytial virus

- \*\* Critical Care Fellow,
- \*\*\* Research Associate, Department of Pediatrics, Mehta Multi-Speciality Hospitals India Pvt. Ltd., Chennai.

email: sasidarpgi@gmail.com

### **Points to Remember**

- Influenza infection in children may lead to asymptomatic illness to severe respiratory distress. Empirical oseltamivir should be started immediately in epidemics, if suspicion of influenza is present.
- *RSV* is the most common viral illness in infants, especially below 6 months of age. Palivizumab can be used in high risk group who get exposed to the virus.
- Oxygen and hydration are the only evidence-based therapies approved for bronchiolitis.
- Treatment with anti virals should not be withheld, based on rapid diagnostic tests alone as there are chances of false negative results.
- More epidemiological studies are needed in developing countries, so that it can help in framing guidelines, following preventive measures and framing vaccination policies.

#### References

- 1. Campbell H. Acute respiratory infection: a global challenge. Arch Dis Child1995; 73(4):281.
- Victora CG, Fenn B, Bryce J, Kirkwood BR. Co-coverage of preventive interventions and implications for childsurvival strategies: evidence from national surveys. The Lancet 2005; 366(9495):1460-1466.
- 3. Wardlaw TM, Johansson EW, Hodge MJ. Pneumonia: The forgotten killer of children: The UNICEF/WHO. 2006.
- 4. Reddaiah V, Kapoor SK. Acute respiratory infections in rural underfives. Indian J Pediatr 1988; 55(3):424-426.
- Williams BG, Gouws E, Boschi-Pinto C, Bryce J, Dye C. Estimates of world-wide distribution of child deaths from acute respiratory infections. Lancet Infect Dis 2002; 2(1):25-32.
- 6. Collaborators MDS. Causes of neonatal and child mortality in India: a nationally representative mortality survey. The Lancet 2010; 376(9755):1853-1860.
- Selvaraj K, Chinnakali P, Majumdar A, Krishnan IS. Acute respiratory infections among under-5 children in India: A situational analysis. J Nat Sci Biol Med 2014; 5(1):15.
- Bicer S, Giray T, Çöl D, Erdað GÇ, Vitrinel A, Gürol Y, et al. Virological and clinical characterizations of respiratory infections in hospitalized children. Ital J Pediatr 2013; 39(1):22.

<sup>\*</sup> Head, Advanced Pediatric Critical Care Center,

Indian Journal of Practical Pediatrics

- Bhuyan GS, Hossain MA, Sarker SK, Rahat A, Islam MT, Haque TN, et al. Bacterial and viral pathogen spectra of acute respiratory infections in under-5 children in hospital settings in Dhaka city. PLoS One 2017; 12(3):e0174488.
- Simoes EA, Cherian T, Chow J, Shahid-Salles SA, Laxminarayan R, John TJ. Acute respiratory infections in children. Disease Control Priorities in Developing Countries 2<sup>nd</sup> edn: The International Bank for Reconstruction and Development/The World Bank; 2006; pp483-497.
- Donnelly CA, Malik MR, Elkholy A, Cauchemez S, Van Kerkhove MD. Worldwide reduction in MERS cases and deaths since 2016. Emerg Infect Dis 2019 Sep. https:// doi.org/10.3201/eid2509.190143.
- 12. Narain JP, Bhatia R. Influenza A (H1N1): responding to a pandemic threat. Indian J Med Res 2009; 129(5):465-468.
- Control CfD, Prevention. Outbreak of swine-origin influenza A (H1N1) virus infection-Mexico, March-April 2009. Morb Mortal Wkly Rep. 2009; 58(17):467.
- Iuliano AD, Roguski KM, Chang HH, Muscatello DJ, Palekar R, Tempia S, et al. Estimates of global seasonal influenza-associated respiratory mortality: a modelling study. The Lancet 2018; 391(10127):1285-1300.
- States/Uts to Central Surveillance Unit, Integrated Disease Surveillance Programme, CDC, Delhi Dated 10.06.2019, Time: 05.30 PM.
- 16. Uyeki TM, Bernstein HH, Bradley JS, Englund JA, File Jr TM, Fry AM, et al. Clinical practice guidelines by the Infectious Diseases Society of America: 2018 update on diagnosis, treatment, chemoprophylaxis, and institutional outbreak management of seasonal influenza. Clin Infect Dis. 2019; 68(6):e1-e47.
- James E. Crowe Jr, Respiratory syncytial virus, chapter 287, Nelson Textbook of Paediatrics, 21<sup>st</sup> edn, Elsevier, 2019.
- Cha MJ, Chung MJ, Kim K, Lee KS, Kim TJ, Kim TS. Clinical implication of radiographic scores in acute Middle East respiratory syndrome coronavirus pneumonia: Report from a single tertiary-referral center of South Korea. Eur J Radiol 2018; 107:196-202.
- Zhang D, Mao H, Lou X, Pan J, Yan H, Tang H, et al. Clinical evaluation of a panel of multiplex quantitative realtime reverse transcription polymerase chain reaction assays for the detection of 16 respiratory viruses associated with community-acquired pneumonia. Arch Virol 2018; 163(10):2855-2860.
- Yýldýrým D, Özdoðru DS, Þeflek B, Cimentepe M, Bayearam Ý, Yarkýn F. Detection of influenza virus infections by molecular and immunofluorescence methods. Mikrobiyol Bul 2017; 51(4):370-377.