

Review Article

The Respiratory Viruses and Challenges in Medical Teaching

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Introduction

The pleiotropy and pleomorphism of viruses are a very important concern. Viruses are known for their special characteristics and give physicians all around the globe a big challenge. Also, there is more consideration for bacteriology rather than virology in the minds of physicians. The Recent emergence of Coronavirus from nowhere is an example. While studying viruses one would not bother about this relatively insignificant virus but it turned out to cause a pandemic in a relatively short period and posed challenges for the world as a whole. Just from a few cases, it brought all the activities in the world to halt. More so the challenge for the Medical community who were most directly confronted with the viruses. From the medical education viewpoint, this was an important concern. A need for the evolution of teaching methods was needed to safeguard the health of Medical Students.

Keywords

Viruses, Corona, Students, Medical, Respiratory,

Discussion

Respiratory viruses can cause significant morbidity and Mortality.

Some of the most important viruses which affect the respiratory tract are Respiratory Syncytial Virus Causes Bronchiolitis and Pneumonia (1) in infants. Also causes otitis media in older children. (2) Characteristics of Respiratory Syncytial Virus they are an enveloped virus with a helical nucleocapsid and one piece of single-stranded, of negative polarity RNA. RNA polymerase in virion (3,4).

Corona Virus

Causes Common cold and SARS Severe Acute Respiratory Syndrome. Characteristics of Corona Virus are in enveloped virus with a helical nucleocapsid and one piece of single-stranded, positive polarity RNA. No polymerase in the virion. There are two serotypes. Laboratory Diagnosis of Virus is the diagnosis primarily a clinical. Antibody-based and PCR-based test is available.

Adenovirus causes acute respiratory disease (5) in infants, plus a wide array of other syndromes including pharyngoconjunctival fever, follicular conjunctivitis, epidemic keratoconjunctivitis, hemorrhagic cystitis, acute diarrhea, intussusception, and encephalomyelitis. (6,7)

Pharyngoconjunctival fever is a clinically distinct syndrome that occurs particularly in association with type 3 adenoviral infection. Features include a high fever with characteristic involvement of pharyngeal lymphoid tissue, conjunctivitis, preauricular and cervical adenopathy, and rhinitis. Nonpurulent conjunctivitis occurs in 75% of patients and is manifested by inflammation of both the bulbar and palpebral conjunctivae of one or both eyes. (8,9)

Parainfluenza Virus Causes bronchiolitis in infants, croup in young children, and the common cold in adults. Characteristics of the Parainfluenza Virus are they have enveloped virus with a helical nucleocapsid and one piece of single-stranded negative polarity RNA. Unlike influenza viruses, the antigenicity of its hemagglutinin and neuraminidase is stable. There are four serotypes.

The Viral infections are mostly transferred through droplet infections, Close contacts, gatherings and mass collection at political, religious events, hostels, institutions, hospitals and small gatherings like classrooms pose a great risk of spread.

Medical teaching is done in an almost similar environment. While offering Teaching to students, usually students are taught in batches, large groups. This applies to all subjects especially more practical subjects like Anatomy, Surgical branches and Ward work.

A need for a policy to decrease the chances of transmission of infection while medical teaching is needed.

Measures to be Taken

Physical distancing is a very important method. Education about Hand hygiene for students is important. Cleaning and disinfecting the practical labs and classrooms should be ensured by authorities.

The students should be taught with division into more batches. Proper and adequate spacing must be ensured. Prescreening for most important viral infections should be done. Regular assessment of Respiratory symptomatology must be done. Proper sanitation and handwashing facilities must be available. Well ventilated rooms for carrying on work should be ensured. Where needed prophylactic antiviral cover should be given. This is more so needed in the case of countries with poor infrastructure.

Conclusion

Given the different nature of viruses and some common features among respiratory viruses, standard protocols must be ensured in all facilities especially in the working environment.

The medical fraternity is more at risk and needs more effective protection. Educating students about social distancing, hand hygiene and proper protocols can significantly decrease the risk and morbidity associate with these viruses.

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