COVID 19 Infection in Paediatrics

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Coronaviruses are group of viruses that can cause mild to severe respiratory illness. In 2019, a new corona virus originated and identified in china and the disease produced by this virus is named Corona Virus Disease 2019 (COVID-19). The World Health Organization (WHO) declared this outbreak as pandemic. It is major health problem affecting all countries leading to health crises and socio-economic problems worldwide. Clinical features are similar to other respiratory infections. Till to date, worldwide nearly 27 million cases and in Pakistan three million cases are reported. The Pediatric cases reported are nearly 7 percent[1].

Statistics and literature have reported that the children are less affected by coronavirus infection than adult. There are many possible reasons. One possible reason is that children have not developed aggressive immune response (Cytokine response) against virus leading to less severe inflammation. Other possible reasons are that children have less outdoor activity and international travel, healthy respiratory tract, generally not having underlying chronic illness. Literature also shows that along with low incidence, the children also have less sever disease, however they may be asymptomatic and can spread infection[2].

Possible route of acquiring coronavirus infection in paediatric patient are same as adult. Children get infection from two ways. Virus enters in respiratory tract after inhalation of infected air due to coughing and sneezing by infected person. Another possible route of entry is mouth touching after having hand contact with infected objects or surfaces. How much time virus live alive on different objects is variable from minutes up to nine hours[3].

Paediatric coronavirus incubation period is 2 to 14 days. Main symptoms include fever, cough, dyspnea, headache, lethargy, nasal discharge, loss of taste and smell, throat ache, loose motion. Children may have few symptoms or all symptoms. At the same time the children might be asymptomatic or have mild to severe symptoms leading to severe breathing difficulty[2,].

Criteria for suspecting coronavirus infection is different in different countries and institutions. Coronavirus infection is possible in children who have come from abroad in last 14 days or direct contact with suspected or confirmed case. Coronavirus infection is also suspected in patients who are admitted in hospital with severe breathing difficulty and are sick[5]. Viral tests i.e. PCR confirms the acute infection. Preferred sample for children are nasopharyngeal and oropharyngeal swab. Children on ventilator, bronchoalveolar lavage or endotracheal aspirate can be performed[4].Apart from PCR test, routine investigations are also helpful in diagnosis of acute infection which include complete blood count, C. Reactive protein, coagulation profile, renal function test, liver function test, arterial blood gases, Chest X. ray and CT scan chest. Normal or Low leukocyte count and increase C. Reactive protein is suggestive of acute infection. Chest x-ray and CT scan chest shows consolidation, effusion or ground glass appearance.

Regarding treatment, there is no definitive drug is available. Treatment protocols are variable in different hospitals. Treatment protocols are also different depending on clinical presentation. Mainly treatment options include antiviral drugs, steroids, hydroxychloroquine and antibiotic drugs if secondary bacterial infection is suspected. Immune based therapy, oxygen and ventilator support is needed in severe cases. Children with mild symptoms can be send home with proper instruction, counseling and isolation guide lines. Children with severe respiratory distress, SpO2 less than normal, shock or hemodynamically unstable, poor fluids or feed intake, inactivity or seizures should be hospitalized. Such admitted patients should get Oxygen to maintain SpO2 more than 92 percent, fluid management, paracetamol to reduce temperature, intravenous antibiotics, oseltamivir, systemic steroids, hydroxychloroquine, inhalers for administration of inhaled medication and close monitoring for worsening of symptoms is needed.

If child is having mild symptoms, can be send home with few instructions. Affected child should stay in separate room. House hold members should stay in a different room. Avoid contact with infected surfaces or object, use disposable gloves, wash hands with soap and water or use hand sanitizer, wash toys and home surfaces.

Paediatric coronavirus prevention is same as adult. Face mask, social distancing, frequent hand washing, avoiding public places and no handshakes. In order to boost immunity balance diet and good sleep with regular exercise is advised to older children. Many companies are claiming for development of vaccine but still this process is under trail.

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