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SHORT REPORTS

COVID-19 pneumonia in a patient with Down syndrome.

Dr. Ghada Mahmoud Abdel-Rafee

Corresponding author
Dr. Ghada Mahmoud Abdel-Rafee,' MBBS, MSC, Radiodiagnosis & Nuclear Medicine Mansoura Health Insurance Hospital Mansoura, Egypt.
E.mail : doctorghada2016@yahoo.com

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ABSTRACT

COVID-19 is a global pandemic that we fight all over the world. Its molecular structure aim for its atypical manifestations & different immune response in individuals. We report a case of Down syndrome with COVID-19 infection ended by death, unfortunately. A young female patient aged 15 y with Down syndrome complained of dry cough, fever & chest pain since 1 week not relieved by course of antibiotics in outpatient clinic. She presented in tertiary care hospital by dyspnea at rest & cyanosis for endotracheal intubation. Laboratory findings revealed low oxygen saturation, lymphopenia & anemia. By the way she is cardiac & had ASD & VSD since birth. The nasopharyngeal swab was positive for corona virus. Plain x-ray chest & NCCT scan of the chest were done & they are non-specific & lead us to a big dilemma, that's why multi-specialty consultants were contributed to preserve her life, but they failed.

Keywords: COVID-19 pneumonia, Down syndrome, acute respiratory distress syndrome

REVIEW OF LITERATURE

Background: The coronavirus COVID-19 is a global pandemic (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) which is very similar to the one that caused the SARS outbreak. (1) This new virus is very contagious and spread very rapidly. The diagnosis is based on polymerase chain reaction (RT-PCR) that realizes the etiology of atypical symptoms. . The deaths per diagnosed cases vary significantly between countries. (2) CoVs are positive-stranded RNA viruses with a crown-like appearance under an electron microscope due to the presence of spike glycoproteins on the envelope. The subfamily Orthocoronavirinae of the Coronaviridae family is classified into four genera of CoVs: Alpha coronavirus (alphaCoV), Beta coronavirus (betaCoV), Delta coronavirus (delta CoV), and Gamma coronavirus (gamma CoV). Furthermore, the beta CoV genus divides into five sub-genera or lineages. (3) It is reported that approximately one person in five becomes seriously ill and had an emergency symptoms as difficulty breathing, persistent chest pain or pressure, sudden confusion, difficulty waking, bluish face or lips, low oxygen saturation & septic shock. (4)

Clinical perspective: The most promising therapy is remdesivir. Remdesivir has potent in vitro activity against SARS-CoV-2 but still under trials. Oseltamivir has not been shown to have efficacy, and corticosteroids are currently not recommended. Current clinical evidence does not support stopping angiotensin-converting enzyme inhibitors or angiotensin receptor blockers in patients with COVID-19.(5) Chloroquine and hydroxychloroquine are relatively well tolerated as demonstrated by extensive experience in patients with SLE and malaria. However, both agents can cause rare and serious adverse effects (<10%), including QTc prolongation, hypoglycemia, neuropsychiatric effects, and retinopathy. (6) There are no specific antiviral medications approved for COVID-19 including testing of existing medications as ACE inhibitors, interferon for treating HCV& Lopinavir/ritonavir for treating HIV, demonstrated in vitro activity against other novel coronaviruses via inhibition of 3-chymotrypsin-like protease.(7) We use corticosteroids to decrease the host inflammatory responses in the lungs, which may lead to acute lung injury and acute respiratory distress syndrome (ARDS). However, many adverse effects may occur as delayed viral clearance and increased risk of secondary infection. Treatment of MS for corona virus as Cell depleting therapies include: Lemtrada, Mavenclad, Ocrevus and Rituxan. (8)

-Imaging perspective: Chest X-rays show minimal basal reticular opacity. NCCT revealed minimal peripheral ground glass opacity & minimal interlobular thickening. Mild cardiomegaly dilated ascending aorta & dilated arch of aorta, no pleural

effusion; likely nonspecific imaging finding, indeterminate appearance for viral infection (CORADS-2).

-Management: Due to absence of proven therapy for SARS-CoV-2, the cornerstone of care for patients with COVID-19 remains supportive care, ranging from symptomatic outpatient management to full intensive care support. However, 3 adjunctive therapies that warrant special mention are corticosteroids, anticytokine or immunomodulatory agents, and immunoglobulin therapy. Symptomatic treatment includes personal hygiene, good nutrition, drinking extra-fluids, physical fitness and resting may help alleviate symptoms. (9)

Outcome: Most people with COVID-19 recover. There is an incubation period of 14 days & so isolation of high risk or contagious cases must be considered. The outcome may range from complete cure to post-infectious squeal up to death. The duration varies from 6 and 41 days, with the most common being 14 days. (10)

PATIENT CONSENT

Written consent was taken from her parents after her death for publication.

Conflicts of interest: None is declared.

Financial disclosure: None is declared.

Final diagnosis: COVID-19 pneumonia.

Differential diagnosis:

The atypical manifestations had many differential diagnosis as atypical viral pneumonia, drug toxicity, interstitial lung disease & pulmonary edema, each had a characteristic pattern)

Figure (1): Bilateral basal reticulo-nodular opacity, prominent aortic knuckle & mild cardiomegaly.

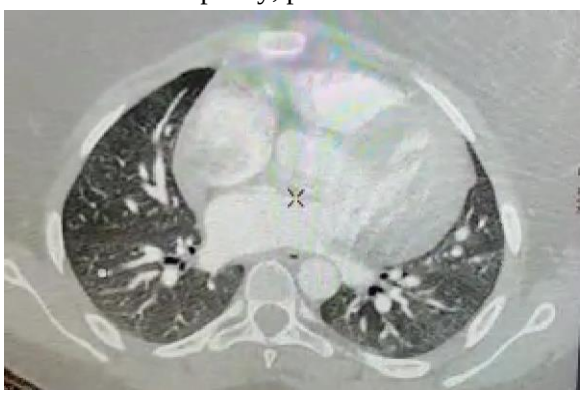

Figure (2): Minimal peripheral ground glass opacity, minimal interlobular septal thickening & dilated cardiac chambers

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