COVID Pneumonia in the Elderly – Not a Basket Case Always

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Abstract

COVID 19 is a respiratory disease, caused by a novel coronavirus, which was christened as SARS-CoV2. It has spread rapidly all over the globe, leading to a pandemic with high mortality, due to the lack of pre-existing immunity. The elderly population (old-old; > 75 years) has been increasingly affected with more severe respiratory symptoms, as compared to the young old (60-75 years) and middle aged patients, probably due to the increasing presence of comorbidities. A greater proportion of the elderly have lymphopenia, raised inflammatory markers and increased D-dimer levels. We report two such cases with severe Adult Respiratory Distress Syndrome (ARDS), who improved with early diagnosis and management. Hence, prompt diagnosis and early intervention can avert a bad outcome.

Introduction

Since the emergence of the 2019 novel coronavirus infection in Wuhan, China in December 2019, it has rapidly spread across the globe, causing an unprecedented and raging pandemic.¹ SARS-CoV-2 spreads via droplets, direct contact and as per the latest bulletin by the WHO, is airborne as well.² ³

The clinical features are varied and include a myriad of symptoms such as fever, cough, breathlessness, myalgia, headache, diarrhoea and sore throat. Atypical presentations such as diarrhoea, absence of fever, severe myalgia is also known. Important laboratory parameters include the absolute lymphocyte count, inflammatory markers such as serum lactate dehydrogenase (LDH), C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), ferritin and D-Dimer, given the propensity of the virus to induce clot formation.

Patients requiring intensive care (ICU) management are more likely to have underlying comorbidities like diabetes mellitus, hypertension, ischemic heart disease, chronic kidney disease and other immunocompromised states. On Imaging, radiological findings are variable and most patients present with peripheral and bilateral lung involvement.⁴ ⁵

Elderly patients with underlying comorbidities are more susceptible to severe illness and the need for ICU admissions. Mortality among elderly patients is high.⁶ We report the presentation and management of COVID pneumonia in the elderly in this case series.

Case Summary 1

An 85 year old female, presented with complaints of fever since 7 days, diarrhoea since 3 days, and a throat swab positive for SARS-CoV-2. On examination, her general condition was unsatisfactory, pulse was 120 per minute, BP 120/80 mm of Hg, but she was afebrile. She was conscious, oriented and did not have cyanosis, icterus, pallor or clubbing. JVP was not raised and there was no edema feet. Respiratory rate was 40 / minute. Heart sounds were normal except for tachycardia. Chest auscultation revealed bilateral lower zone crepitations, the breath sounds were equal bilaterally. Rest of the systemic examination was within normal limits.

Oxygen saturation was 90% on room air, on pulse oximetry. Her arterial blood gas (ABG) showed a PaO₂ of 55mmHg on 60% FiO₂ with PFR of 92% suggestive of severe acute respiratory distress syndrome (ARDS) and her chest radiograph showed bilateral diffuse peripheral heterogeneous opacities. The WBC was 3,400 /cmm (with lymphocytes 3.3%). Her Inflammatory markers [interleukin 6 (IL6) 234.9 (NR upto 7 pg/ml), serum ferritin 383.4 (NR 12-270 microgm/L), LDH 537 (NR 140-280 U/L)] were all raised ; D-dimer was >15000 (NR < 800 ng/ml); Troponin I was 0.53 (NR < 15 pg/ml). Serum procalsitonin level was 0.059 ng/ml (NR < 0.5 ng/ml). A high resolution computed tomography (HRCT) thorax was suggestive of diffuse confluent areas of ground glass opacities (GGOs) with multiple areas of forming consolidation seen scattered in bilateral lung parenchyma predominantly seen in bilateral lower lobes [severity score 3-50 to 75% involvement] Figure 1. Rest of the investigations were within normal limits.

She was maintained on a non-rebreathing bag and mask (NRBM) and was administered low molecular weight heparin (LMWH) 0.6 mg subcutaneously bd, Intravenous methylprednisolone 40 mg bd, Tocilizumab (since she was in cytokine storm) 400 mg IV slowly and an antibiotic cover (IV Piperacillin Tazobactum) was given. She recovered clinically over a period of 10 days, with a gradual decline in the oxygen requirement and with the blood gases normalising, the inflammatory markers

Fig. 1: HRCT thorax of case1
He maintained oxygen saturation of above 90% on supplemental oxygen of 2 liter/min delivered by nasal prongs, with a negative swab on day 15. He was discharged on home oxygen therapy based on the long term oxygen therapy criteria for chronic respiratory diseases at the time of this case write up. He was also started on Tab Rivaroxaban 10 mg, on discharge, in view of raised D dimer.

**Discussion**

Coronavirus disease 2019 (COVID-19) has a heterogenous spectrum ranging from asymptomatic cases to severe fatal pneumonia and extrapulmonary manifestations. This disease shows a varied presentation in the extremes of ages as compared to the general adult population. We discuss few clinical features and its correlation with our cases in the elderly population.

Both of our patients were elderly and older than 75 years old. This age group being described as the old-old patients in a multicentric study from China. Wu et al reported 3% of 72,314 cases in China in those 80 years or older. Presentations of COVID in the elderly is generally more severe than the middle aged population with reference to symptoms, decreased WBC, a greater proportion of lymphopenia. Our patients had a similar presentation. They presented with COVID pneumonia with severe ARDS. The severity being suggested by the ABG (PaO2 / FiO2 ratio <100) and the CT severity grading more than 3 (more than 50% bilateral lung involvement). The proportion of multiple lobe involvement reported to be higher in the elderly, was observed in our cases. Liu et al describe more men than women in their series. We describe a female and male patient in our case series. This age group was described to have a higher presence of co-morbidities and atypical symptoms which was not the case in our patients.7

Treatment is challenging in the elderly, as they have a diminished organ reserve and are prone to multiorgan dysfunction, secondary bacterial infections and the associated complications of comorbidities. Supportive care and supplemental oxygen along with close monitoring of the vital parameters played an important role in the management of such patients.6-10 The same was observed in both our cases. While one case was treated with a monoclonal antibody against interleukin 6 (Tocilizumab), both cases were otherwise treated conservatively with appropriate oxygen therapy and supportive management. Though current updated guidelines do not clarify use of tocilizumab in age group greater than 65 years, we used the special drug before these updates with counselling, discussion and consent from patient’s kin. The patient tolerated the drug very well with no adverse events.

Also, in literature, raised D’dimer is associated with a higher mortality but both our patients survived inspite of raised D’dimer suggesting a prompt diagnosis and treatment as a key answer to this problem.11

Thus prompt identification, triaging and management of covid pneumonias in elderly is associated with a good prognosis inspite of the challenging age factor.

**References**