Multiple drugs

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Lack of efficacy and off label use: case report

A 66-year-old woman exhibited lack of efficacy during an off-label treatment with umifenovir, moxifloxacin, piperacillin/tazobactam, meropenem and convalescent anti-SARS CoV-2 plasma for coronavirus disease-2019 (COVID-19) pneumonia. She also exhibited lack of efficacy to tigecycline, polymyxin B, voriconazole, daptomycin, linezolid and thymalfasin for bacterial infections. Addtionally, she received an off-label treatment with methylprednisolone and immune globulin for COVID-19 pneumonia [*not all dosages and routes stated*].

The woman had history of smoking and was diagnosed with COVID-19 on 2 February 2020. She was hospitalised and diagnosed with COVID-19 pneumonia. She started receiving off label treatment with umifenovir [Arbidol], moxifloxacin, methylprednisolone 40mg four times a day, IV immune globulin [immunoglobulin] 10-20g four times a day for COVID-19 pneumonia. She was initiated on non-invasive ventilation and oxygen support through nasal cannula followed by high flow nasal cannula oxygen therapy (HFNC). However, the antibacterial treatment failed and she showed worsening of symptoms.

The woman's antibacterial therapy was switched to off label piperacillin/tazobactam; however, fever persisted. Her antibacterial treatment was switched to off label meropenem and convalescent anti-SARS CoV-2 plasma [convalescent plasma]. However, she showed worsening of symptoms indicating lack of efficacy with umifenovir, moxifloxacin, piperacillin/tazobactam, meropenem and convalescent anti-SARS CoV-2 plasma. She was at risk for multiple organ injury. Further, she received human umbilical cord mesenchymal stem cell (hUCMSC) intervention twice. During the intervention, she started receiving treatment with tigecycline, polymixin B [polymyxin B], voriconazole administered once, linezolid and thymalfasin to resolve bacterial infections; however, her condition worsened showing elevated respiratory rate, blood oxygen saturation lower than 86%. She required intratracheal intubation, extracorporeal membrane oxygenation (ECMO) support. She was declared as critically ill case with severe mixed type pneumonia, acute respiratory distress, sepsis, multiorgan injury involving kidney, respiratory system and heart [aetiology not stated]. She received continuous renal replacement therapy (CRRT) and was initiated on daptomycin as antibacterial therapy. The planned third hUCMSC intervention was suspended due to presence of severe mixed coinfection indicating lack of efficacy with tigecycline, polymyxin B, voriconazole, linezolid, thymalfasin and daptomycin. She developed ventilatory dependence. Further, owing to the hUCMSC intervention, she showed improvement in the organ injury and received hUCMSC for three times in the second round. She was discharged with improvement in most of the vital signs. In a follow-up, she showed significant improvement and received third round of hUCMSC and continued on term follow-up.

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