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Management of corona virus disease-19 (COVID-19): the Zhejiang experience.

[Article in Chinese]

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The current epidemic situation of corona virus disease-19 (COVID-19) still remained severe. As the National Clinical Research Center for Infectious Diseases, the First Affiliated Hospital of Zhejiang University School of Medicine is the primary medical care center for COVID-19 in Zhejiang Province. Based on the present expert consensus carried out by National Health Commission and National Administration of Traditional Chinese Medicine, our team summarized and established an effective treatment strategy centered on "Four-Anti and Two-Balance" for clinical practice. The "Four-Anti and Two-Balance" strategy included antiviral, anti-shock, anti-hypoxemia, anti-secondary infection, and maintaining of water, electrolyte and acid base balance and microecological balance. Meanwhile, integrated multidisciplinary personalized treatment was recommended to improve therapeutic effect. The importance of early virological detection, dynamic monitoring of inflammatory indexes and chest radiograph was emphasized in clinical decision-making. Sputum was observed with the highest positive

rate of RT-PCR results. Viral nucleic acids could be detected in 10% patients' blood samples at acute period and 50% of patients had positive RT-PCR results in their feces. We also isolated alive viral strains from feces, indicating potential infectiousness of feces. Dynamic cytokine detection was necessary to timely identifying cytokine storms and application of artificial liver blood purification system. The "Four-Anti and Two-Balance" strategy effectively increased cure rate and reduced mortality. Early antiviral treatment could alleviate disease severity and prevent illness progression, and we found lopinavir/ritonavir combined with abidol showed antiviral effects in COVID-19. Shock and hypoxemia were usually caused by cytokine storms. The artificial liver blood purification system could rapidly remove inflammatory mediators and block cytokine storm. Moreover, it also favored the balance of fluid, electrolyte and acid-base and thus improved treatment efficacy in critical illness. For cases of severe illness, early and also short periods of moderate glucocorticoid was supported. Patients with oxygenation index below 200 mmHg should be transferred to intensive medical center. Conservative oxygen therapy was preferred, and noninvasive ventilation was not recommended. Patients with mechanical ventilation should be strictly supervised with cluster ventilator-associated pneumonia prevention strategies. Antimicrobial prophylaxis should be prescribed rationally and was not recommended except for patients with long course of disease, repeated fever and elevated procalcitonin (PCT), meanwhile secondary fungal infection should be concerned. Some patients with COVID-19 showed intestinal microbial dysbiosis with decrease dprobiotics such as Lactobacillus and Bifidobacterium. Nutritional and gastrointestinal function should be assessed for all patients. Nutritional support and application of prebiotics or probiotics were suggested to regulate the balance of intestinal microbiota and reduce the risk of secondary infection due to bacterial translocation. Anxiety and fear were common in patients with COVID-19. Therefore, we established dynamic assessment and warning for psychological crisis. We also integrated Chinese medicine in treatment to promote disease rehabilitation through classification methods of traditional Chinese medicine. We optimized nursing process for severe patients to promote their rehabilitation. It remained unclear about viral clearance pattern after the SARS-CoV-2 infection. Therefore, two weeks' quarantine for discharged patients was required and a regular following up was also needed. The Zhejiang experience above and suggestions have been implemented in our center and achieved good results. However, since COVID-19 was a newly emerging disease, more work was warranted to improve strategies of prevention, diagnosis and treatment for COVID-19.