Title page

Practical experiences on the prevention and treatment strategies to fight against COVID-19 in hospital

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Dear Editor,

We read with great interest the recent article by Fang et al, which shared their invaluable experience in combating coronavirus disease 2019 (COVID-19) in Shenzhen and provided important assistance in the fight against this emerging infectious disease in other places in China and even the world[1]. As of Apr 8, 2020, within a matter of 3 months since the beginning of the outbreak of COVID-19, 1 353 361 confirmed cases have been reported with 79 235 deaths in 210 countries globally[2]. From Jan 20 to Mar 5, our hospital had admitted 35 confirmed cases of COVID-19 and more than 260 suspected cases. With all confirmed cases discharge, we created good results of "double no" (no nosocomial infection, no developed into critical or death case)[3], while hospital-related transmission of COVID-19 was recently suspected in up to 29% of health-care workers, and patients mortality was 4.3%[4]. Here, our practical experiences are also shared to help other countries to combat the epidemic.

Fang et al mentioned about proactive measures would prevent the disease transmission in a powerful way at an early stage[1]. We mainly adopted the following prevention and control measures. First, medical staff, supplies, and wards were prepared in advance. In late December 2019, we were acutely aware of a novel pathogen causing outbreaks of COVID-19 in the Wuhan city. Then we strengthened the training of emergency team members, enhanced the awareness of prevention and control in medical

staff, and began emergency stockpile of protective materials for medical personnel, which ensured an efficient supply of medical materials later. Meanwhile, 1000 patient beds were planned for use, and 2 buildings were started according to the epidemic need. Second, a novel worthily spreading system called the infection control observing system was set up, which has been highly recommended by the frontline medical staff and adopted by the headquarters of supporting Hubei medical team and Jianghan temporary treatment centers[3]. The observing system, as a proactive infection control tool, minimized the risk of nosocomial infection, and offered psychological protection of medical workers in the fight against COVID-19, which has been applied in China nationwide [3,5,6]. Last, information technology was used to fight COVID-19 epidemic[3,7]. Up to now, respiratory droplets and close contact was the major transmission route of COVID-19[8]. Many patients come to and from the hospital may lead to the risk of cross-infection. As the first internet hospital in China, we added many new services, including self-developed AI doctor(doctor dingbei), online diagnosis, medicine delivery offline, online help pregnant, palm doctor system, etc., realizing the concept of "1+2+3", namely, 1 platform (big health management platform) + 2 applications (WeChat + APP) + 3 major functions (online consultation + psychological counseling + AI intelligent screening), which had provided thousands of free online diagnosis and prescription to patients including Jingzhou and Wuhan(Hubei, China), solved their daily medical needs and reduced the risks of hospital cross-infection. Moreover, paperless medical records were implemented in our whole hospital, especially in isolation wards, which minimized the risks of hospital cross-infection.

As reported by Sahu et al in this Journal, COVID-19 epidemic was the ongoing 3rd

coronavirus outbreak of the 21st century, which resulted in many deaths worldwide[9]. We also adopted the following medical treatment strategies to improve clinical outcomes[3]. First, the case management system of "Classification on areas, types and levels" was implemented, whose core was to distinguish patient areas, patients and medical staff, and managed them accurately. Concretely, severe and critical cases were treated in the negative pressure unit and ICU (intensive care unit) in the charge of experienced ICU team. Newly confirmed and unstable cases were managed by respiratory teams to prevent them from becoming severe or critical cases. Stable and suspected cases were treated by infection team. Observation cases were treated by previous medical staff in the isolated wards. Medical staffs were also divided into three regular levels of management. Second, "Two early, three changes and three strictness" was another innovative way. "Two early" were early multidisciplinary diagnosis and treatment by multiple departments including respiratory, infection, critical care medicine, and traditional Chinese medicine, and early use of Chinese medicine treatment; "Three changes" were to realize intelligent, remote and systematic taking advantage of our hospital as the first internet and intelligent hospital in China; "three strictness" were strict checks, strict training and strict organization. Finally, "One person, one strategy" included: early use and whole process participation of traditional Chinese medicine, and strived to make each patient have the treatment of traditional Chinese medicine; One prescription for one person was to guarantee the personalized, high-quality treatment; Preventive measures in traditional Chinese medicine and medical diet therapy instruction were adopted based on the patient's entity and constitution. Additionally, our hospital adopted other preventive

measures such as herbal tea, anti-epidemic sachets, Chinese medicine fumigation, Chinese foot bath powder, and so on. The goal was to make patients benefit from the treatment and recover quickly.

In conclusion, COVID-19 outbreak does not respect geopolitical boundaries, and scientific proactive measures and medical treatment strategies are crucial to effectively respond to the epidemic[10]. We hope that our experiences would provide great assistance to the prevention, control and clinical practice of COVID-19 in all countries worldwide.

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