PROFESSOR JUAN TAO (Orcid ID : 0000-0001-6571-6649)

DR CHANGZHENG HUANG (Orcid ID : 0000-0003-1531-1269)

DR XIAO-YONG MAN (Orcid ID : 0000-0003-3331-5538)

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Emergency management for preventing and controlling nosocomial infection of 2019 novel coronavirus: implications for the dermatology department

Running head: Emergency management of 2019-nCoV in dermatology department

J. Tao,[1,2] Z. Song,[1,3] L. Yang,[1,4] C. Huang,[1,2] A. Feng,[1,2] X. Man[5]

1.Department of Dermatology, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430022, China

2.Hubei Engineering Research Center for Skin Repair and Theranostics, Wuhan 430022, China

3.The Second Clinical Medical College, Chongqing Medical University, Chongqing 400010, China

4.Hunan Normal University School of Medicine, Changsha, 410013, Hunan, China

5.Department of Dermatology, The Second Affiliated Hospital of Zhejiang University School of Medicine, Hangzhou 310009, Zhejiang, China

Corresponding author: Juan Tao

E-mail: tjhappy@126.com

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Summary: As of Feb 15, 2020, the novel coronavirus (2019-nCoV) has rapidly spread throughout China and across the world with more than 60,000 laboratory-confirmed cases. Due to the current lack of specific treatment and the risk of transmission during the viral incubation period, infection prevention and control of 2019-nCoV are both urgent and critical to global health. In this article, we aim to highlight the necessity of implementing protective measures, and recommend how to set proper emergency management plans for preventing and controlling nosocomial infection of 2019-nCoV in dermatology departments.

A cluster of unexplained pneumonia cases were initially reported in Wuhan, China in December 2019. The pathogen, a novel coronavirus named 2019-nCoV (2019 novel coronavirus), was isolated from lower respiratory tract samples of infected patients and the resultant disease was termed as COVID-19 (Coronavirus Disease 2019). By Feb 15, COVID-19 has rapidly spread throughout China and across the world with more than 60,000 laboratory-confirmed cases. Of note, the transmission of 2019-nCoV may occur during an incubation period that may be as long as 14 days.[1,2] Currently, infection prevention and control are urgent and critical due to the lack of specific treatment and heightened risk of spreading during the incubation period.

During the outbreak of COVID-19, it was discovered that 77.5% of infected professionals worked in general wards,[3] which indicates the strong transmissibility of COVID-19 and reminds us of the high risk of nosocomial transmission in general departments. Since the outbreak, the Chinese government has implemented a series of strict prevention and control measures, however, it is still possible to miss infected patients in the asymptomatic incubation period. Additionally, both the awareness of protection and protective facilities are generally lacking in medical departments, including dermatology. Moreover, most patients in the dermatology department have

skin lesions which makes it easier for 2019-nCoV to transmit via indirect contact. Therefore, dermatology departments could be at a relatively high-risk for COVID-19 outbreaks occur. Thus, it is necessary to set emergency management protocols for preventing and controlling the nosocomial infection of COVID-19 in dermatology department.

Triage and infection-control for outpatients with skin diseases：Located in the infected center, our hospital has set-up the pre-examination and triage stations both at the hospital entrance and the outpatient department of each sub-department. In addition, a dermatologist is arranged to cooperate with nurses at the dermatology triage stations to further evaluate patients if necessary. Triage to the fever clinic is necessary when skin disorders patients have fevers or are suspected as being COVID-19 infected (Figure 1).[1] When the fever is considered to be caused by a skin disease, the dermatologist participates in the consultation. For patients determined to be free of viral infection, confirmed as non-infected or discharged by the designated department, the dermatology clinic is then made accessible.

N95 mask-wearing and hand hygiene need to be performed correctly by care providers and patients during consultation.[4] For patients requiring hospitalization, transfer to wards will be permitted only if the results of blood routine test and chest CT scans identify the patient's illness to be unassociated with COVID-19.[1]

Online consultation for mild and non-emergency patients has obviously decreased the number of patients in dermatology clinics during the epidemic period, which reduces the probability of nosocomial infection of 2019-nCoV.

Emergency management for inpatients suspected of COVID-19：Although strict measures are implemented in outpatient department, patients in the asymptomatic incubation period may still have a chance to be admitted to the dermatology ward. Therefore, emergency management for inpatients should be carried out urgently when inpatient has symptoms associated with COVID-19 during hospitalization. Experienced staffs trained about COVID-19 should be organized immediately to set up a contingency group for preventing and controlling the outbreak of

COVID-19. This group should daily discuss and report the updated conditions of suspected infected patients. Then, this group should communicate with the experts in the respiratory intensive care and radiology departments in a timely manner to evaluate whether the patient needs further examination and treatment to exclude COVID-19. The above measures will stabilize the order of wards and avoid the nosocomial infection of 2019-nCoV.

Isolation, reporting, and transfer of suspected patients must be conducted following local infection control policies and processes.

Handling of confirmed patients with skin diseases：Patients' skin disorders might be neglected in the quarantine ward. For this reason, we first recommend sending pictures of skin lesions to dermatologist via email and teleconference to analyze the patient's condition. If the condition is still unclear, the dermatologist should go to the clean area of the isolation ward for a multidisciplinary consultation. When none of the above works, it is the responsibility of the dermatologist to consult at the patient's bedside. The information about the patient, such as the primary disease, evolution of skin disease, medication, related examinations, and other special medical history, should be provided to the dermatologist in advance. By this method, the exposure time of the dermatologist to the patient and the infection risk can be greatly reduced.

Although being in an infected center, no infected patients has been detected in our departments, owing to heightened surveillance. Most of our recommendations are based on integrating current clinical practices with previous experiences in similar coronavirus outbreaks. With the accumulation of clinical evidence and the development of science and technology, these management principles will be modified continually.

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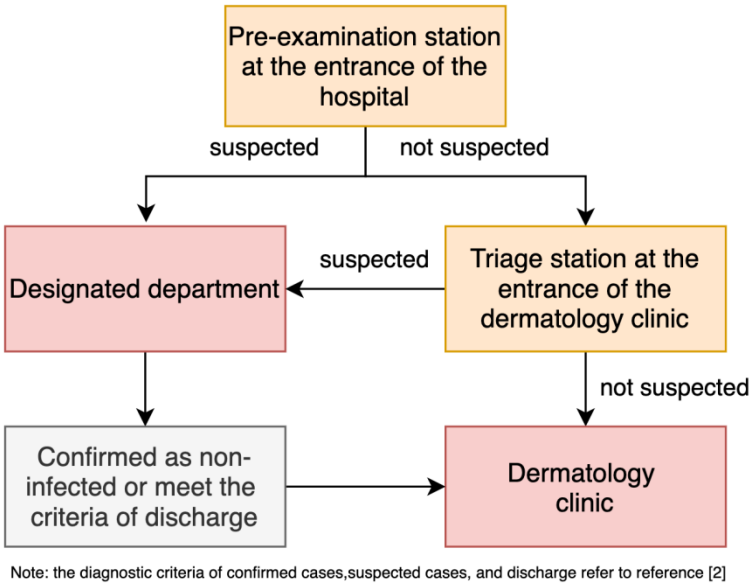
Figure 1. Flow diagram of pre-examination triage for outpatients with skin diseases



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