

中文題目：新冠病毒確診病患的環境監測與臨床表徵

英文題目：Clinical manifestation and environment surveillance of a patient with persisted positive result of COVID-19 PCR test

作者：盧德恩<sup>1</sup>，\*李文生<sup>2</sup>

服務單位：<sup>1</sup>台北市立萬芳醫院內科部，<sup>2</sup>台北市立萬芳醫院內科部感染科

## Introduction

Severe acute respiratory syndrome coronavirus 2 (SARS-COV-2), originated from Wuhan city in 2019 and rapidly spread worldwide shortly. Till now, this global pandemic remained unsolvable; no drugs exhibited significant efficacy toward SARS-COV-2 in clinical trial. As previous studies clearly stated the possibility of persisted positive SARS-CoV-2 when patient had comorbidity or immunocompromised state. The environmental disinfection and personal protective equipment(PPE) usage became a major concern nowadays. Hence, we presented an advanced environmental investigation regarding a case of COVID-19 with prolonged hospitalization because of fluctuated result of COVID RT-PCR test.

## Methods

A 60 year-old female patient was brought to this hospital from Taiwan Taoyuan International Airport because of the positive nasal swab result of real time reverse-transcriptase PCR (RT-PCR). Based on patient's description, she disclosed recent travel history of Houston, Los Angeles and had close contact with passengers from the airport who had been diagnosed as confirmed COVID-19 case.

At admission, the patient had general malaise, chest discomfort and mild anosmia. Chest radiograph showed no obvious consolidation or infiltration, however, further screening of high resolution computed tomography(HRCT) reportedly showed focal groundglass opacity( GGO ) at the superior segment of the right lower lung. According to CDC guideline, this patient was admitted to negative pressure isolation room for further management.

After admission, patient's spirit improved gradually as we prescribed ceftaroline, levofloxacin and hydroxychloroquine. Patient was planned to be discharged under Taiwan's CDC protocol. Surprisingly, recurrently positive finding was obtained from sputum and nasopharyngeal specimen; Hospitalization was prolonged for thirty days more. Because of fluctuant finding of patient's RT-PCR result, we made an advanced investigation regarding patient's surrounding ( by using RT-PCR ), from patient's hand, to bed sheet, bedquilt, isolation room floor, curtain, nurse's glove, Protective coveralls...etc to conclude possibility of cross transmission between patient and environment during recurrence interval.

## Results

As World Health organization (WHO) considered respiratory droplets and contact to be the main routes of transmission, we collected surface swab test of patient's surrounding ( 15 places) for RT-PCR exam during 21th day of admission, and the result reportedly showed negative finding in all places. Patient's vital signs were relatively stable throughout admission, no fever, or cough was noticed, and the patient was discharged smoothly after 52 days hospitalization.

## Conclusion

Prolonged SARS-CoV-2 RNA virus shedding from recurrence interval showed no possibility of transmission after 14 days hospitalization, even if patient had underlying comorbidities.

**Keyword:** Severe acute respiratory syndrome coronavirus 2 ( SARS-COV-2), RT-PCR, recurrence of COVID-19.

Date	April 3 ,2020	April 5,2020	April 7 ,2020	April 13 ,2020	April 16 ,2020	April 18 ,2020	April 20 ,2020	April 21 ,2020	April 24 ,2020	April 27,2020	April 30 ,2020
Day after onset	1	3	5	11	14	16	18	19	22	25	28
Nasal swab	+	+	+	+	-	-	-		+	-	-
Sputum			+					+	-	-	+
Body temperature	Normal, < 37.5	Normal, < 37.3	Normal, < 37.5	Normal, < 37.6	Normal, < 37.5	Normal, < 37.5	Normal, < 37.5	Normal, < 37.5	Normal, < 37.5	Normal, < 37.5	Normal, < 37.5
Respiratory rate	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal

  

May 1 ,2020	May 4 ,2020	May 6 ,2020	May 8 ,2020	May 11 ,2020	May 13 ,2020	May 15 ,2020	May 18 ,2020	May 21 ,2020	May 22 ,2020
29	32	34	36	39	41	43	46	49	50
-	-	+	+	-	-	+	+	-	-
+	-	-	+	-	-	-	-	-	-
Normal, < 37.5	Normal, < 37.2	Normal, < 37.5	Normal, < 37.5	Normal, < 37.5	Normal, < 37.4	Normal, < 37.5	Normal, < 37.5	Normal, < 37.4	Normal, < 37.5
Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal

