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SARS-CoV2 containment during pregnancy: single Center experience and the unique Chinese reality in Prato

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TO THE EDITOR

On December 31st, 2019, Chinese health authorities reported an outbreak of pneumonia cases of unknown etiology in the city of Wuhan.

On January 9th, 2020, The Chinese Center for Disease Control and Prevention identified a novel coronavirus as the cause of these pathologies.

On February 11th, the World Health Organization announced that the respiratory disease has been called COVID-19 (CoronaVirus Disease), and the causing agent was identified as severe acute respiratory coronavirus 2 (SARS-CoV-2). Due to the rapid worldwide spread of the virus, the WHO declared the state of pandemic on March 11.

Following mainland China, Italy has been the second SARS-CoV-2-affected country and is currently one of the most affected European countries, with more than two hundred thirty thousand cases diagnosed and more than thirty-three thousand cases of COVID-19 associated deaths (data on June 2020), with a significant difference in case distribution among the various regions, with Lombardy, Piedmont and Emilia Romagna counting the three highest number of cases in the whole country; Lombardy reported an unfortunate record of infected people. The reason why some areas of Italy have been so severely affected is still not clear. In fact, the first cases occurred in those areas before social interventions took place due to the poor knowledge of the new coronavirus and its high contagiousness.

Italy was the first European country to adopt strict lock-down measures: on January 22nd, the Minister of Health assembled a task force to coordinate interventions in the country.

The Ministerial Circular of January 22st established the activation of a surveillance system for suspected cases of SARS-CoV-2 infection. The coordination of surveillance is entrusted to the "Istituto Superiore di Sanità", which collects the reports from all the Regions through a dedicated web platform.

On March 11, the Council of Ministers approved the Prime Ministerial Decree regarding the containment and management of the epidemiological emergency from COVID-19, applicable on the whole national territory, in which the closing of commercial activities and services to the person was arranged, with the exception of those activities considered essential for population livelihood.

From March 22, transfers between different Municipalities by public or private means of transport have been, exception made for proven work needs, absolute urgencies or health reasons.

In May 4, Phase 2 started, with the loosening of some social restrictions; however, the population was advised to keep staying alert, due to the possibility of the epidemic resuming.

In Italy, especially in some cities, the Chinese population is highly represented. Out of a total of 1,390,434 inhabitants residing in Milan, 40,438 are Chinese citizens while in Rome the Chinese are 22,815 out of a total of 2,844,395 inhabitants. The demographic data of Prato city on December 31, 2019, revealed a total population of 195,089 people of which 152,718 Italians and 24,906 Chinese (out of a total of 42,371 foreigners). Particularly, women were 100,395, 12,302 of which were Chinese.

On the occasion of the Chinese New Year, which was held on January 25th, a possible massive spread of the virus was feared, owing to many people coming back from their permanence in China, which was counted numerous COVID-19 cases.

In January, as already implemented in their country of origin, Chinese people living in Prato self-quarantined, largely anticipating Italian lockdown measures; they self-isolated and implemented social containment measures early, using face masks and closing commercial activities.

The purpose of this article is to document the experience of a unique Italian reality in Prato (Tuscany) characterized by the mixture of Italian and Chinese people and cultures. In this paper, we focused our experience in an II level obstetrical center.

The Santo Stefano Hospital in Prato adopted a series of safety measures promptly instituted as soon as the arrival of the infection in Italy has been ascertained.

Differentiated PPE (personal protecting equipment) according to the risk of each patient were promptly introduced. Patients were initially divided into different pathways based mainly on epidemiological risk criteria.

During SARS-CoV-2 pandemic, in Prato, all pregnant women chose the hospital setting for delivery. From January 1st to June 14th, we recorded a total of 902 deliveries, of which 193 (21.39%) by Chinese women, 175 (19.4%) by patients from other nationalities, and the remaining 534 by Italian women.

Among the pregnant women admitted to the obstetric unit in Prato for suspected COVID-19-related symptomatology, we registered 5 cases showing fever, all in the second or third trimester of pregnancy; all of them were tested through nasopharyngeal (NP) swab. Among them, 1 Italian woman at the 26th gestational week tested positive for SARS-CoV-19; she was affected by fever, cough, low oxygen saturation and was diagnosed with interstitial pneumonia on pulmonary ultrasound examination. As regards the remaining 4 women, 3 of them had fever and cough and tested negative for SARS-CoV-2, but 1 was positive for influenza B, and in the other 2 patients no viral factors were identified. The last patient, presenting only fever, was admitted to delivery and tested negative for SARS-CoV-2 and after delivery diagnosed with *E. Coli* chorioamnionitis.

Starting from April 4th, we performed universal molecular screening on women admitted for delivery by NP swabs. All the patients were asymptomatic, all of them declared to have respected COVID-19 containment measures and denied contacts at risk (with positive people). Only 1 woman tested positive at Real Time Polymerase Chain Reaction (RT-PCR) on NP swab: she was Italian and gave birth through vaginal delivery after PROM at 37 weeks of gestation.

Neither symptomatic or positive nor identified/detected with NP swab screening Chinese pregnant women have been reported.

We explained this very low rate by the containment measures rigorously applied in Prato, a unique Italian reality in which we observe a condition of existing at the same time of a multi-ethnicity and in which the high rate of Chinese people caused in advance a SARS-CoV-2 alert.

Tuscany, and particularly our town, witnessed an outstanding sense of responsibility by the whole population, whose self-isolation has permitted to avoid the massive spread of the SARS-CoV-2.

Pregnant women and other fragile categories were protected early, thanks to the isolation of people, the closure of Chinese businesses, the voluntary quarantine for all individuals from areas at risk or with risky contacts.

The close contact with the Chinese population probably contributed to raise awareness among the Italian population residing in Prato towards SARS-CoV-2 threat when the first case in Italy had not yet been registered.

This integration between cultures takes place in Tuscany, a region where territorial services are effective in the management of pregnant patients. The presence of a well-structured consultancy network help women to better orient themselves in the pregnancy care path, limiting hospital accesses to necessary cases, even before the COVID-19 spread. There is no doubt that the habits of the Chinese population, so widely represented in the city (16% of the entire resident population), has led to an integration of the daily life customs between Chinese and Italians starting from economic relations to important cultural implications.

Dedicated and preferential care pathways for pregnant women of any gestational age were promptly established at the Santo Stefano Hospital in Prato, which provided pregnant women not to wait in hospital areas common to other patients.

A universal SARS-CoV-2 screening for pregnant patients guaranteed the distinction of the pathways between pregnant patients safeguarding non-infected women and health care workers.

Considering that pregnant patients with COVID-19 are generally asymptomatic up to 87.9% reported in literature (1) and that the birth event represents a highly infectious moment for staff and other patients, childbirth in COVID-19 positive women provides for PPE and special containment measures for staff and newborn.

The epidemiological factor had initially weighed heavily on the diagnosis and surveillance of COVID-19. At the end of the pandemic this factor appears to be no longer decisive but the criteria for suspecting were anamnesis (contacts at risk), known symptoms, investigations (swab and serological tests).

In conclusion, the association between the preventive measures started by the Chinese population, the good local territorial health management of pregnancy in Tuscany and the organization of dedicated pathways for pregnant women at the Santo Stefano Hospital in Prato contributed to an effective containment of the spread of coronavirus, especially among pregnant women.

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