

Outcome of Pregnancies During COVID-19 Infection: 7 Cases Report at The University Hospital of Angre/Abidjan

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Abstract

The third coronavirus outbreak (SARS-CoV-2) after SARS-COV in 2003 in China and MERSCOV in 2012 in the Middle East, which occurred in December 2019 in China, spread rapidly to all countries of the world bringing the World Health Organization (WHO) to declare a pandemic on March 11, 2020. This condition, in addition to its low lethality in young people, remains a psychosis for the general population. Current data on COVID-19 and pregnancy have evolved significantly, so the outcome of Covid-19 pregnancies is unpredictable and varies from woman to woman. Through the first 7 observed cases of COVID-19 during pregnancy for 2170 births at the Teaching Hospital of Angre during 1 year, from April 2020 to March 2021, the authors wanted to expose the outcome of these pregnancies. The management was carried out in collaboration with the Department of Infectious and Tropical Diseases (DITD), we observed: 1 spontaneous abortion, 2 low-birth by induction, 2 cesarean sections, 2 gestants died in a context of acute respiratory distress (1 during pregnancy and the other postpartum).

Keywords: SARS-CoV-2, COVID-19, Pregnancy, Angre's Teaching Hospital.

Introduction

The Covid-19 pandemic is particularly serious in that it is severely disrupting the health care systems of all affected countries, including developing and resource-limited countries, forcing them to adapt quickly. Coronaviruses generally cause infections of the respiratory tract, gastrointestinal system and nervous system [1-3]. The prevalence of Covid-19 among pregnant women was reported to be similar to that of the general population [4]. Moreover, pregnancy induces immunological and physiological changes making the pregnant woman more vulnerable to infections in general and viral pneumonia in particular [5, 6]. Through the first 7 cases of Covid-19 observed during pregnancy during one year, at the Angre's Teaching Hospital in Abidjan (Ivory Coast), the authors wanted to expose the outcome of these pregnancies.

Methodology

This was a study of cases observed over 12 months, from April 1, 2020 to March 31, 2021, the cases were collected at the Ob-

stetrics Gynecology department. Thus, 7 confirmed cases were collected out of 25 suspected cases, for a total of 2170 deliveries. All suspected cases meeting the WHO definition (cough, fever and dyspnea, close contact with a confirmed case less than 14 days old), were isolated and had a nasopharyngeal PCR sample. The management was carried out according to the recommendations (barrier measures, wearing of the surgical mask) of the Infectious and Tropical Diseases department (DITD) of the Teaching Hospital of Treichville in Abidjan. Pregnant women positive for Covid 19, who presented with a life-threatening emergency (Desaturation $\leq 92\%$ and / or PaO₂ ≤ 70 mmHg) were systematically referred to the Department of the Infectious and Tropical Diseases from the resuscitation service. The others could give birth at the Teaching Hospital of Angre, and after 48 hours of postpartum monitoring the patient's discharge was authorized with isolation measures. Exclusive breastfeeding was suggested with respect for barrier measures vis-à-vis the newborn and the family. An appointment for a postnatal visit in 3 months was prescribed. The hygiene de-

partment was called in to disinfect the isolation room. The patient was declared cured after 2 negative controls 1 week apart.

Observations

Observation 1

It is KAJ 40 years, G6P3 (1 voluntary termination of pregnancy (abortion), 1 spontaneous miscarriage and 3 living children), referred for induction of pregnancy at term. Prenatal follow-up does not reveal any particularity. The patient was tested positive for Covid 19 as a contact subject as her spouse was being treated. At the time of admission, it was a gestant in apparent good general condition, afebrile and not producing aerosol. After triggering a prostaglandin induction, a follow-up and isolation labor, she gives birth to a healthy-looking male newborn, W=3000g, H=50 cm, PC=33cm, Apgar 8-9 in 5 min that will be put in isolation. The biological tests were in favour of lymphopenia. Further treatment will be done in an outpatient basis.

Observation 2

This is a 26-year-old student, G.L. 2nd nulliparous gesture with a history of a voluntary termination of pregnancy. She was evacuated for severe pre-eclampsia complicated with acute lung edema on a twin pregnancy of 34 WA. No specific pathology or risk factors were identified. As soon as the patient was admitted to the Angre's Teaching Hospital, she was admitted to the operating room for an emergency caesarean section. Faced with high blood pressure at 17/12 cmHg, a double injection of 5 g of magnesium sulphate was made intra muscular. Prior to induction, respiratory distress persisted with dyspnea at 42 cycles/min. The C-section allowed the birth of healthy-looking twins; a first female twin weighing 2,300 g with an APGAR at 5-5, then a second male twin weighing 3,000 g with an APGAR at 7-8 in 5 min. Due to the health context and the shortness of breath, the sample confirmed Covid-19 infection. Management was therefore adjusted. Biological examinations were without particularity apart from high transaminases. Post-partum management continued in the intensive care unit at the Department of the Infectious and Tropical Diseases. The evolution was favorable. The patient was released at 10 days after admission.

Observation 3

SAS, 30-year-old patient, Head of Human Resources, followed for an early pregnancy in a G2P1 with a history of allergic site and 1 C-section for a narrowed pelvis, having had influenza-like syndrome with fever at 39°C, headache, rhinorrhea and cough at 6 weeks of amenorrhea. A frontal pulmonary Rx was performed, was in favor of pneumonia (Figure 1). The nasopharyngeal sample will confirm the presence of Sarscov 2. Its management will be provided by the Department of Infectious and Tropical Diseases (Azithromycin, paracetamol, vitamin C, anticoagulant, ARV) with isolation of 14 days at home, the evolution will be marked by a spontaneous abortion after 10 days. Her post abortum follow-up was done on an outpatient basis with 2 controls.



Figure 1: Frontal pulmonary x-ray

Observation 4

Patient G2P1 housewife 33 years old, with no previous history, carrier of a pregnancy of 24 weeks of amenorrhea, referred for febrile cough on pregnancy. In her prenatal follow-up, there are 3 good-quality ANCs. Her treatment will be based on broad-spectrum antibiotic therapy. She suffered severe respiratory distress on D3 of hospitalization with alteration of the general condition. The chest x-ray face being in favor of massive and severe pneumopathy. Before a serious oxygen desaturation, she will be evacuated to SMIT where her death will be noted 48H after admission. The sample will confirm the presence of Sarscov 2.

Observation 5

This is a G2P1 housewife, with no particular history, carrying a 26-week pregnancy with amenorrhea, who was referred for an infectious pregnancy syndrome with the notion of cough. The evolution is marked by respiratory distress, a chest scan was performed showing signs strongly suggestive of Covid 19 infection. She is transferred to the DITD, the sample taken will confirm the Covid 19 infection. The management will allow a favorable evolution. The patient will give birth after a prostaglandin induction at 37 weeks of amenorrhea to an apparently healthy female newborn, W = 2900g, Height = 49 cm, PC = 32 cm, Apgar 7-8 in 5 minutes.

Observation 6

Unemployed G3P2 patient, 32 years old, known to be HIV-positive and not ARV-compliant, who received an emergency caesarean section for an infectious syndrome and umbilical cord circular, and who will have respiratory distress at post-operative D3 with severe desaturation (92%). After a transfer to the resuscitation service, she is referred to the DITD after the discovery of Sarscov 2 where she dies within 24 hours in a table of acute respiratory distress and multivesicular failure.

Observation 7

NMP, G2P0 (1 abortion) 26 years old patient with no previous history, merchant, came by herself to gynecological emergencies of the Teaching Hospital of Angre for a fever associated with pelvicgia, with a pregnancy of 21 weeks + 1 day. The interrogation revealed that the signs would have started 3 days before her admission by the sudden occurrence of an unstated fever, permanent, with diffuse algias (headache + arthralgia + myalgia). The patient would have initiated self-medication without success. At her admission it was concluded to an infectious syndrome on pregnancy of 21 weeks + 1 day with the threat of late abortion. She was placed in isolation and an antipyretic treatment was started, pending etiological treatment. The etiological balance was without particularity. On the other hand, the chest CT showed "frosted glass" images, strongly suggestive of COVID-19 illness (Figures 2 and 3). A nasopharyngeal swab was therefore performed, which confirmed the diagnosis. The patient was admitted to the resuscitation unit for the rest of her management. She stayed there for 5 days, and the evolution was favorable. The exit was therefore decided for an outpatient follow-up, and appointments were given for her prenatal follow-up and an induction was recommended in the term of the pregnancy.

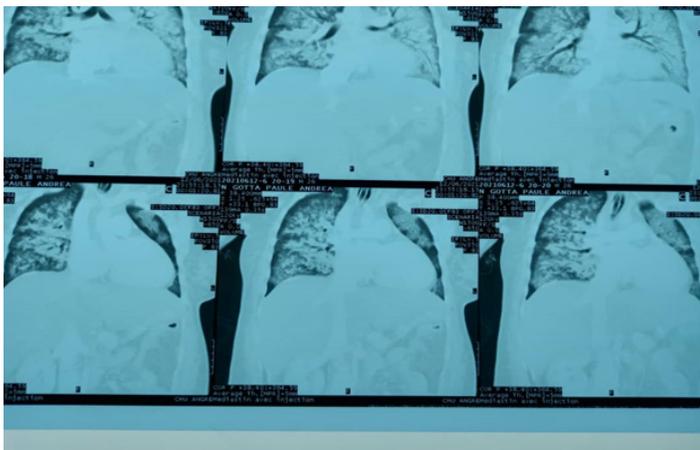


Figure 2: "Frosted glass" images on a frontal chest x-ray

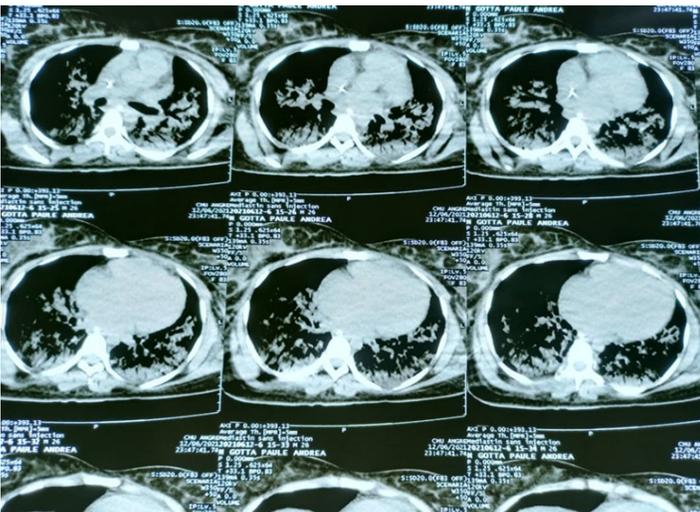


Figure 3: CT images

Discussion

In our underdevelopment environment, the extent of Covid-19 was undervalued due to the limited detection of the virus, restricted only to suspect and symptomatic cases. Thus, during one year, only 7 cases were confirmed for 2170 deliveries. Nationally, there were 44,326 confirmed cases and 247 deaths as of April 1, 2021.

In our series of cases the patients were admitted for various reasons including fever and cough as found in the literature [7-9]. In a systematic review of 538 cases in pregnant women, Huntley and al showed that the most common symptoms were fever (48%) and cough (46%). Other symptoms included dyspnea (16%), myalgia (17%), fatigue (15%) and headache (9%). Laboratory results included lymphopenia (47%) and a modest increase in liver enzymes (17%) [10].

Thus, based on the data currently available, there is no evidence that pregnant women with COVID-19 were more likely to develop severe or fatal pneumonia [11]. In the first observation, it was an asymptomatic gestant whose screening is linked to close contact with her spouse in isolation at home and in the second observation, the sudden onset of dyspnea during an outbreak made it possible to screen for Covid-19, as a suspect case. In total, very limited studies in terms of numbers seem to show that pregnant women are at risk of developing a serious form similar to that observed in the general population [12].

In severe forms, patients would be more at risk of developing during pregnancy complications such as spontaneous miscarriages as in our third observation, premature rupture of membranes, premature deliveries, growth delays intra-uterine and fetal death in utero [13]. In 2 patients the progression was rapidly towards acute respiratory distress leading to maternal death, without comorbidity factor for one of the gestants (4th case) and the presence of HIV for the second patient who died in the postpartum (6th case). During label, it may have a higher risk of acute fetal distress, caesarean delivery (1 case) and neonatal death. Possible vertical transmission was reported in the third quarter, suggesting that congenital infection would be possible but exceptional [10]. Based on current data, fetal and neonatal outcomes appear to be good in most cases. In the 5th and 7th observation (26 and 21 WA), early and efficient management in the 2nd trimester of pregnancy allowed a cure and a favorable outcome of the pregnancy. Indeed, the third trimester of pregnancy is considered by many authors to be a high-risk period [4,6,9].

As a result, the complications described may reflect poor tolerance to hypoxia or fever or comorbidity factors such as diabetes and obesity [14].

Regarding the teratogenic risk of SARS-CoV-2 infection, there are no reported cases due to a lack of placental viraemia to date. The rare cases of neonatal complications reported were not directly related to SARS-CoV-2 infection [9,13,14]. One of the hypotheses that may explain the absence of maternofetal transmission via the placenta was recently proposed by Zheng and al. [15] and demonstrated that the SARS-CoV-2 receptor, the angiotensin 2 converting enzyme (ACE2) necessary for its cellular integration has a very low expression in almost all cell types of the mater-

nal-fetal interface, suggesting that these cells at the interface level are minimally sensitive to SARS-CoV-2.

In addition, given the thromboembolic risks, in the management of per and post-partum, it is imperative to administer low molecular weight heparins and compression stockings.

In sub-Saharan Africa, organizational and structural problems require standardization of the management of this association in collaboration with infectious disease specialists and resuscitators through the establishment of an integrated unit for the management of deliveries and management in charge of acute respiratory distress syndromes. Thus, in order to reduce maternal morbidity and mortality, it would be appropriate to systematically eliminate Sars-cov 2 infection in the face of persistent fever with a biological diagnosis of negative malaria.

Conclusion

The effect of Covid-19 during pregnancy is still little known due to a lack of reliable data and representative statistics. In our small series of cases, the maternal results observed in late pregnancy as well as the fetal and neonatal results show that the presence of Sars-cov 2 during pregnancy is a real factor of comorbidity especially in late pregnancy. In light of the outcome of pregnancies with symptomatic Covid-19, the management of this association should be organized in collaboration with infectious disease specialists and anesthesiologists. Today, a glimmer of hope exists with the development of Covid-19 vaccination that can be administered to the pregnant woman in the 3rd trimester of pregnancy.

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