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Keywords: *COVID 19, pregnancy, hydroxy-chloroquine, and ambulatory.*

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Covid and Pregnancy: The Possibility of Ambulatory Care

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I. Introduction

The pregnant woman was always considered fragile and highly susceptible, given the physiological, hemodynamic, and anatomical changes induced by pregnancy. This fear is finding it's substantial legitimacy by considering the observation established according to the specialized literature: "The vulnerability of pregnant women to respiratory infections (such as influenza virus), as well as the increased complications observed during epidemics of various coronaviruses which preceded covid-19 (SARS-COV and MERS-COV) "(1). Without forgetting the immunological and physiological cardiopulmonary changes of pregnancy, which make pregnant women more vulnerable to infectious complications and respiratory pathologies. High rates of maternal complications (admission to intensive care, need for mechanical ventilation, and even death) as well as fetal complications (intrauterine growth retardation, premature births, or even fetal death in utero or even neonatal), were observed during previous SARS-COV and MERS-COV epidemics (2). However, to date, the majority of the available data related to infection with SARS-COV-2, also known as covid-19 in, pregnant women do not seem to indicate higher infection rates or increased risk of complications compared to the general population, except a few studies showing an increased risk of admission to intensive care (without increased risk of mortality) (3,4). But the current state of knowledge is well documented by a review of the literature made by Corinne Hubinont and her team (5), they made it clear that the majority of infected patients are not very symptomatic, 10% of them may present lung disease that is important to diagnose and treat. While specifying the existence of a significant risk of premature birth requiring the administration of antenatal corticosteroids for fetal lung maturation, but the infection does not affect the delivery route and does not contraindicate loco-regional anesthesia.

II. Means and Methods



The data was collected on the files of the various patients, the computer data recorded at the level of the computer database of the epidemiology service, the data collected by the medical follow-up at home, and the data of the social survey and the information. Provided by the application « wikaytna: our protection » downloadable on the phones of patients with Covid to determine contact subjects (Photo1).

Poto1: Illustration of the mobile application set up by the Moroccan health ministry for good traceability of affected subjects and contacts.

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III. Results

In our series, we have 11/1608 (0.7%) patients who were diagnosed affected by covid-19. Our screening strategy in the gyneco-obstetrics services was taken in consultation with all the stakeholders of the medical team, namely not to screen all the patients presenting to gyneco-obstetrics services, but rather those patients having clinical signs suggesting the Covid infection either because they were considered contact cases.

For more details, we preferred to put the results on descriptive tables given the small number of patients collected in our series:

Table 1: Summary of the age of the patients and their symptoms

N° Patients	Age	Fever	Cough	Headache	Anosmia	Ageusia	Diarrhea	Dyspnea
1	28 Years	+	+	+	+	+	+	-
2	32 Years	+	+	-	+	+	-	-
3	31 Years	+	+	+	+	+	-	-
4	25 Years	-	-	-	-	-	-	-
5	37 Years	-	-	-	-	-	-	-
6	32 Years	+	+	+	+	+	-	-
7	33 Years	+	+	-	+	+	-	-
8	26 Years	+	+	+	+	+	-	-
9	36 Years	-	-	-	+	+	-	-
10	32 Years	+	+	+	-	-	-	-
11	37 Years	+	+	-	+	+	-	-

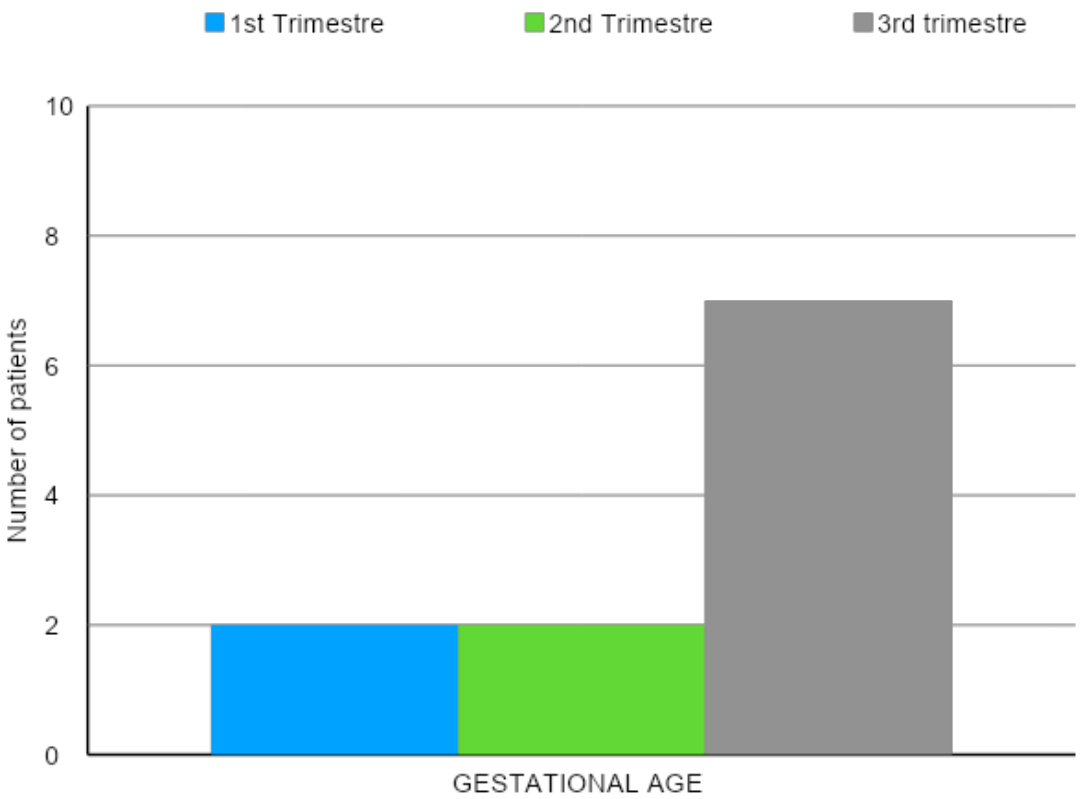
Table 2: Distribution of patients by trimester of onset of the disease

N° Patients	Vitamine C	Paracetamol	Zinc	Hydroxychloroquine	Azithromycin	Lopinavir	Healing	Progress of Pregnancy
1	+	+	+	+	+	+	+	Miscarriage 6 w 5 d
2	+	+	+	+	+	-	+	Normal childbirth at 38 w
3	+	+	+	+	+	-	+	Normal childbirth at 36 w
4	+	+	+	-	-	-	+	Caesarean 38 w
5	+	+	+	-	-	-	+	Ongoing pregnancy 35w
6	+	+	+	+	+	-	+	Ongoing pregnancy 33 w

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7	+	+	+	+	+	-	+	Ongoing pregnancy 32 w
8	+	+	+	+	+	-	+	Ongoing pregnancy 31 w
9	+	+	+	+	+	-	+	Ongoing pregnancy 26 w
10	+	+	+	-	-	-	+	Ongoing pregnancy 19 w
11	+	+	+	+	+	-	+	Ongoing pregnancy 18 w

Table 3: Showing the different treatments taken by the patients and their evolution (W: Weeks, d: Days)



IV. Discussion of the Results

Since the diagnosis of the first case affected by covid-19 in our country and especially in our region in Meknes, the local scientific and epidemiological team have consulted on the care of pregnant women who would be proved affected by COVID 19 and the decision was: To hospitalize only pregnant patients with signs of severity or with comorbid factors as reported in the literature (Renal failure, heart failure, Insulin-dependent or complicated requiring diabetes (micro or macro angiopathy), chronic respiratory failure or asthma or cystic fibrosis or any chronic pathology that can decompensate during viral infection, immune depression (drug, uncontrolled HIV or CD4 <200 / mm), organ transplant, liver failure, hematologic malignancy, cancer, obesity (6,7 and 8) and we did not consider the 3rd trimester to be an aggravating factor, we have however established in addition to the surveillance Daily medical care at home by a general practitioner, follow-

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up in obstetrical consultation every three days at a well-defined circuit called covid-19 circuit, with limited access to positive patients, authorized personnel equipped in accordance with international recommendations (full blouse , visor, FFP2 mask and on shoes). This circuit has three hospital rooms, an operating room and a delivery room. This service is equipped with cameras and all the necessary logistics to limit the possible spread of the virus to other structures in the hospital. The only measure missing is maintaining negative pressure in the various rooms. Concerning medical and paramedical nursing staff, surface technicians, and logistics workers, the workforce has been reduced to the strict minimum with a rolling system and a recovery period, without forgetting an additional measure: the requisition of many hotels to accommodate covid nursing staff. Radiological exploration (Chest X-rays and Thoracic Scanners: low dose chest CT scan (between 0.01 and 0.66 mGy)) after abdominal protection (lead apron) as described in the literature (9) was carried out in only one patient (N ° 1), because she had a high viral load with a second control given its persistence at high rates despite two week treatment. Her pregnancy was unrecognized. Apart from this patient, radiological examinations was granted for patients presenting signs of severity or associating comorbid factors (In this series it was not necessary). Invasive explorations have not been indicated or performed, as recommended by litterature (10,11).

We decide to give the first-line treatment (Vit C, Paracetamol, and Zinc) only to asymptomatic patients. 2nd-line treatment (Vit C, Paracetamol, Zinc, Azithromycin, and Hydroxychloroquine (12,13 and 14) was reserved for symptomatic patients, of course without any contraindication and after a cardiological consultation + a normal electrocardiogram The 3rd-line treatment includes antiretrovirals (Lopinavir).

We, therefore, find ourselves with three groups of patients as has been clearly specified in table number 3:

One patient (10%) was hospitalized because of her high viral load despite the absence of signs of severity, with unremarkable CT scans. She started on the second-line treatment, but despite taking two weeks, she kept a high viral load, so it was agreed to give her an antiretroviral (Lopinavir), and the outcome was favorable.

Three patients (27%) took second-line treatment because they were symptomatic without signs of severity or comorbidity.

Seven patients (64%) took the first-line treatment because they were asymptomatic; these patients were recovered from contacts of symptomatic Covid 19 cases.

The evolution of the patients: A miscarriage (10%), two term deliveries (18%), and a premature delivery of 36 weeks with amenorrhea (10%). The other seven patients are still pregnant: three of them in the 2nd trimester, the other four are in the 3rd trimester. They have a regular medical follow-up and do not present any problem as well as their pregnancies. For the three patients who gave birth, only one had premature delivery at 36 weeks with a hypotrophy expected on a small growth retardation in utero diagnosed antenatally. (15,16 et 17) but without any hemodynamic impact on the newborn because a precautionary pulmonary maturation had already been carried out before birth by antenatal-corticosteroids administration (5), and the baby has been hospitalized for four days in the neonatal department as a safety measure. This spontaneous incident does not allow us to establish a ratio of 07 patients who have not yet given birth. All samples taken from the three babies were found to be negative (2, 5 et 15); of course, breastfeeding was authorized (15) with the precautionary measures for a single patient because she was still under treatment and had not yet negative its PCR (test of genomic amplification of the virus: Polymerase Chain Reaction) for the two others they were respectively negative for three weeks and two weeks already before the childbirth. The only patient who posed a problem for us was the patient who had a miscarriage at six weeks of amenorrhea, her pregnancy was unrecognized during the diagnosis of her Covid-19 infection, with no notion of delay in menstruation, and the patient was on 20 ug estrogen-progestogen pill contraception. She was not very symptomatic, but on the other hand, the high viral load persistence forced us to use first-line treatment, then second-line treatment and only after use of the anti-retroviral that we were able to have the cure but unfortunately, two weeks later she had a spontaneous miscarriage two days after the diagnosis of a stopped pregnancy dated by her obstetrician at six weeks and five days.

V. Conclusion

Unlike previous epidemics caused by other coronaviruses, this covid-19 pandemic does not appear to have consequences for pregnant women, apart from a maternal death described in the literature (18). In our series with the recovery of all our patients, the absence of repercussions in the three patients who gave birth except for the small growth retardation in uétro and the miscarriage (which may not be considered as a direct consequence of the covid -19 because we know that apart from any predisposing or aggravating factor, 15 to 20% of early miscarriages are due to chromosomal abnormalities) we can conclude that it is possible to take care of pregnant patients with covid- 19 on an outpatient basis, while considering our selfs happy and lucky because we are aware that although 75% of patients are paucisymptomatic, according to the literature, there would be 25% who could present moderate to severe respiratory distress (5) and that in

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the face of epidemiological phenomena as exceptional and unpredictable as this, we have to be humble and stay on our guard especially with the second wave starting to emerge.

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