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Prognostic Significance of Il-6 in Women with Antenatal Fetal Death during Covid-19 Pandemic

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Abstract
The proinflammatory cytokine IL-6 was studied by the method of immune-ferment analysis (IFA) in the blood serum in women with antenatal fetal death during covid infection. 3 patients suffering from this complication were examined (the principal group) and 25 patients - of adequate age groups and gestation periods but live fetuses in both groups presented SARS cov 2 infection which was confirmed with laboratory PCR (Polymerase Chain Reaction) test. The result of studies showed that the content of proinflammatory cytokine IL-6 in women with antenatal fetal death was significantly higer in the blood than in patients with normal progress of pregnancy. The obtained data prove that further studies of cytokine profile and especially of IL-6 may become an important method for the prognosis for antenatal fetal death, during SARS Cov 2 pandemic period.

Keywords: IL-6, pregnancy, IFA, SARS cov2.

Introduction
The worldwide incidence of coronavirus disease 2019 (COVID-19) infection is rapidly increasing, and after a year with this disease, we know that obstetric complications such as preterm delivery, IUGR, and stillbirths increase [2,4] but still we have limited information about influence of coronavirus disease on pregnancy and fetal wellbeing. On the other hand, it is well known that covid causes hyper inflammation and cytokine storm as an immune response [8,4]. Accumulating evidence suggests that cytokine storm syndrome (CSS) an overactive immune response triggered by COVID-19, rather than the virus itself, is responsible for maternal and fetal complications [1].
In this article we represent our experience with 3 confirmed cases of covid-19 and antenatal fetal death presenting in the first University clinic of TSMU. This study aims to evaluate the immunological prognostic markers in pregnant women confirmed with COVID-19 and antenatal fetal death to provide the reference for clinical work. All 3 patients presented with symptoms of COVID-19 disease, including cough, myalgias, fever, chest pain and headache. All of them were admitted to the hospital in the obstetric/gynecology department. None requiring intensive care unit admission.

Design
A prospective case-control study.

Case description
Represented below are 3 cases of COVID-19 during the pregnancy with antenatal fetal death. All patients were admitted to TSMU, the First University Clinic from 30.03.20 to 30.05.2021. All of the patients were stable on admission. They were in various gestational weeks so we had the opportunity to observe the effect of COVID-19 during the different phases of pregnancy.

Table 1: Clinical features of women with COVID 19 infection.

	Patient 1	**Patient 2**	**Patient 3**
AGE	26	29	34
Gestational Age	29	30	31
Fever (on admission)	37,8	38,1	38,0
Cough	Present	-	-
CRP	10 mg/L	14 mg/L	8 mg/L
Leukocyte count	15	18	10
Mixed infection	N0	No	No

Results

table 1 shows main clinical features of patients (n =3) and the patients in control group (n=25) the two groups were homogenous and no significant differences were noted in the clinical data.

All the 3 pregnant women had a history of epidemiological exposure to COVID-19. The age of the pregnant women ranged from 20- to 35-year-old. The gestational weeks of those patients ranged from 23 to 31 (in both main and control groups) weeks on admission. All patient had fever among three confirmed COVID-19 patients. Two patients had an occasional cough. All of them were diagnosed mild COVID-19, and none of them developed severe COVID-19 with severe respiratory distress. Data from laboratory tests showed that none of them had lymphopenia on admission. The patients had elevated concentrations of C-reactive protein (>10 mg/L). The concentrations of alanine aminotransferase (ALT) and aspartate aminotransferase (AST), lactate dehydrogenase was normal during hospitalization in our hospital. D-dimer in all patients were elevated. Additionally, we controlled IL-6 concentration in both groups, IL-6 level were high, but in patients with antenatal fetal death this immunological marker was significantly higer than in case of normal pregnancy, live fetus.

Table 2: IL-6 content in women with covid 19 and normal pregnancy and in women with covid 19 and Antenatal Fetal Death.

	IL-6 concentration
The principal group	221,4 ± 16,2
The control group	135 ± 14,2

IL-6 concentracion in blood serum in patients with normal pregnancy and AFD (Antenatal Fetal Death) in both groups COVID 19 was confirmed.

Conclusion

in conclusion, COVID 19 infection seems to have a negative effect on the fetus, in mild\ moderate symptoms in the acute phase of the infection although vertical transmission is not yet be proven [1,5].

This analysis reveals that coronavirus infections in pregnant women caused by SARS in

these 3 cases COVID-19 did not lead to severe respiratory distress and maternal deaths.but may cause higer index of proinflammatory cytokines such as IL-6 which may serve as a prognostic marker for antenatal fetal death, as well as asses the qualifying bit of infection progress, but further studies of larger number of patients are necessary to confirm the results reported in our article.

References

1. Critical Care Obstetrics and Gynecology ISSN 2471-9803.
2. Fried M., Kurtis J.D. (2019). Systemic inflammatory response to influenza during pregnancy is associated with pregnancy loss and preterm delivery.
3. Hirshberg A., Golberger N., Levin K. et all. (2020). Care of critically ill pregnant patients with coronavirus disease 2019: a case series.
4. Liu Y., Chen H., Tang K., Guo Y. (2020). Clinical manifestation and outcome of SARS-CoV-2 infection during pregnancy.
5. Mor G., Aldo P., Alvero A.B. (2020). The unique immunological and microbial aspects of pregnancy 17: 469-482.
6. Napoli C., Benincasa G., Criscuolo C., Faenza M., Liberato C., Rusciano M. (2021). Immune Reactivity during COVID-19: implications for treatment. Pubmed abstract.
7. WHO coronavirus Disease Pandemic 2021.
8. Wong S.F., Chow K.M. (2018). Pregnancy and Perinatal Outcomes of women with severe acute respiratory sybdrome Am Obstet Gynecol 191; 292-297.
9. Yokie L.J, Iwasaki A. (2018). Interferons and proinflamatory cytokines in pregnancy and fetal development.