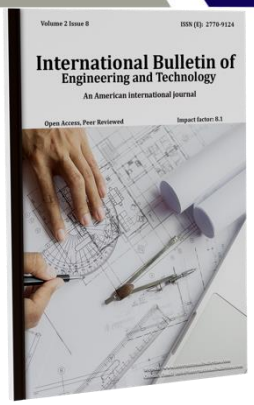

LEVEL OF PROCALCITONIN AND D-DIMER FOR DELIVERY OF PREGNANCY WOMEN WITH CORONOVIRUS DISEASE.

Abdujapparova Naziraxon Erikli qizi
Fergana Medical Institute of Public Health
Master's student of Obstetrics and Gynecology
Uzbekistan, Fergana
https://doi.org/10.5281/zenodo.10516287

Abstract: It is known that during pregnancy some viral infections significantly affect fetal development and normal physiological changes in the pregnant woman's body increase susceptibility to respiratory diseases. Thus, pregnant women are more likely to be infected with SARS-CoV-2 and to become ill with COVID-19 than the general population. They are at increased risk of hospitalisation, ventilatory support and other subsequent maternal, fetal and neonatal health problems. Severe COVID-19 infection during pregnancy has been associated with increased adverse perinatal outcomes, although studies differ as to which outcomes it may affect. More detailed characterisation of obstetric and neonatal outcomes is needed, including details of indications for preterm birth and additional neonatal adverse outcomes.

Introduction.

Nowadays we need to determine the relationship of procalcitonin and d-dimer in complicated pregnancy with adverse outcome and prevent its complications for both mother and foetus in pregnant women undergoing COVID-19. In order to determine the influence of procalcitonin level in pregnant women with coronovirus infection for further treatment and tactics of pregnancy management, its continuation or termination by delivery of the woman.

Also to define the effect of D-dimer level on the condition of pregnant woman with crown virus infection for further determination of delivery route. Necessary to identify the relationship between procalcitonin and D-dimer in complicated course of pregnancy with extragenital disease using crown virus infection as an example.

Materials and Methods: The study was conducted on the basis of "SOVID Centre" for pregnant women in Fergana region. The material of the study were case histories of pregnant women, who fell ill with SOVID-19 in the third trimester of pregnancy and had complications in the last months (November, December) of 2021.

Fifty inpatient case histories with pregnant women's complaints, diagnosis on admission, clinical diagnosis, laboratory, instrumental and ultrasound investigations were analysed. In laboratory blood analysis, attention was paid to the level of procalcitonin and D-dimer.

Retrospective analysis of case histories of pregnant women who underwent covid infection with its severe course and complications such as pre-eclampsia, bronchopneumonia, bilateral extrapartum pneumonia, respiratory failure, acute respiratory distress syndrome and pulmonary oedema was carried out as a method of study.

Results and Discussion: The results of the study revealed that women of reproductive age and pregnant women mainly from rural areas were infected. The result of laboratory tests in determining the level of procalcitononin and D-dimer in the diseased pregnant women differed sharply from the reference value.

Pregnant women with severe COVID-19 and its severe complications were classified into the following clinical diagnoses: 4 cases of bronchopneumonia and pre-eclampsia, 16 cases of bilateral community-acquired pneumonia, 14 cases of bilateral community-acquired pneumonia and respiratory failure, 8 cases of bilateral community-acquired pneumonia and respiratory failure plus pre-eclampsia, 8 cases of bilateral community-acquired pneumonia and pre-eclampsia.

The standard procalcitonin level was 0-0.1ng/ml normal, 0.1-0.5ng/ml partial bacterial infection, 0.5-2ng/ml moderate risk of severe systemic infection. According to the classification of the severity of the course of the disease and the procalcitonin level, the following values were obtained: in 8 cases - normal, in 25 cases - moderate risk of severe systemic infection, in 17 cases - partial bacterial infection. According to the data obtained, 80% of pregnant women with covid infection had an increase in procalcitonin level and 20% remained normal.

The limit of D-dimer norm for the third trimester of pregnancy is up to 644ng/ml. At the end of the study, 9 patients had elevated D-dimer and 41 patients had normal values. According to the results of the analysis, D-dimer increased in 18% of pregnant women, and 82% had reference values.

Based on the severity of the course of the disease, delivery was performed as follows: 12-physiological delivery and 38- operative delivery.

According to the gestational age of newborns - 21 premature and premature children - 29.

On Apgar scale 7-8 points 37 newborns, 8-9 points 13 newborns.

Conclusions: Due to the data obtained we can come to the following conclusion: procalcitonin provides an opportunity to predict complications of pregnancy course and timely prevention of maternal and infant mortality. Elevated D-dimer level indicates unfavourable outcome of pregnancy or worsening of the patient's condition with accession of coagulation system disorder, i.e. DIC syndrome, which may lead to maternal death. Determination of the level of procalcitonin helps to assess the severity of the condition of pregnant women with a severe course of COVID-19 and its complications against the background of bacterial infection of the upper respiratory tract. With timely diagnosis of bacterial infection in the blood of pregnant women can solve the issue of induction of labour and further preparation of women for delivery. Taking into account the complication of systemic infection in the mother's body, it is possible to predict the course of normal labour. Based on the status of the patient given the complication of systemic infection in the mother, a normal labour can be predicted. Depending on the status of the patient, delivery may be physiological or surgical. An increase in procalcitonin does not always indicate a rise in D-dimer levels. If so, there is a possibility of a favourable outcome for mother and foetus. D-dimer is elevated only in those at increased risk of systemic inflammatory infection. Early diagnosis of COVID-19 complications affects neonatal outcome, preventing intrauterine foetal infection, impaired uteroplacental-foetal blood flow and intrauterine foetal death. Timely assessment of the severity of the condition of pregnant women contributes to improved neonatal survival and the delivery of a healthy baby.

References:

1. Harris RL, Musher DM, Bloom K et al. Manifestations of sepsis. Arch Intern Med 1987; 147: 1895–1906.
2. Bossink AW, Groeneveld AB, Hack CE, Thijs LG. Prediction of mortality in febrile medical patients: how useful are systemic inflammatory response syndrome and sepsis criteria? Chest 1998; 113: 1533–1544.
3. Bossink AW, Groeneveld AB, Thijs LG. Prediction of microbial infection and mortality in medical patients with fever: plasma procalcitonin, neutrophilic elastase-alpha1-antitrypsin, and lactoferrin compared with clinical variables. Clin Infect Dis 1999; 29: 398–407.
4. Leibovici L, Shraga I, Drucker M, Konigsberger H, Samra Z, Pitlik SD. The benefit of appropriate empirical antibiotic treatment in patients with bloodstream infection. J Intern Med 1998; 244: 379–386.
5. Harbarth S, Garbino J, Pugin J, Romand JA, Lew D, Pittet D. Inappropriate initial antimicrobial therapy and its effect on survival in a clinical trial of immunomodulating therapy for severe sepsis. Am J Med 2003; 115: 529–535.
6. Laupland KB, Zygun DA, Doig CJ, Bagshaw SM, Svenson LW, Fick GH. One-year mortality of bloodstream infection-associated sepsis and septic shock among patients presenting to a regional critical care system. Intens Care Med 2005; 31: 213–219.
7. Bates DW, Sands K, Miller E et al. Predicting bacteremia in patients with sepsis syndrome. Academic Medical Center Consortium Sepsis Project Working Group. J Infect Dis 1997; 176: 1538–1551.
8. Wang SJ, Kuperman GJ, Ohno-Machado L, Onderdonk A, Sandige H, Bates DW. Using electronic data to predict the probability of true bacteremia from positive blood cultures. In: Overhage MJ, ed., Proceedings of the 2000 AMIA
Symposium. Bethesda, MD: AMIA, 2000; 893–897.
9. Aalto H, Takala A, Kautiainen H, Repo H. Laboratory markers of systemic inflammation as predictors of bloodstream infection in acutely ill patients admitted to hospital in medical emergency. Eur J Clin Microbiol Infect Dis 2004; 23: 699–704.
10. Jaimes F, Arango C, Ruiz G et al. Predicting bacteremia at the bedside. Clin Infect Dis 2004; 38: 357–362.