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OBSTETRIC CARE OF PREGNANT AND POST-PARTUM/BIRTH-GIVING WOMEN WITH COVID-19

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ABSTRACT

Obstetric care, according to the regulations, is carried out in hospital treatment structures by qualified medical specialists. It requires a good organization that guarantees quality obstetric care in various conditions (emergency or scheduled admission) that will lead to the birth of a healthy and full-term newborn.

Pregnant women are extremely susceptible to viral respiratory infections, including SARS-CoV-2. This is due to physiological and immunological changes that occur in the body during pregnancy. One of the serious problems of the pandemic that reached our country is the lack of sufficient and scientifically proven information. Research centers around the world are constantly analyzing what they have learned about the virus, the disease it causes, and all the accompanying factors. Infection with SARS-CoV-2 during pregnancy is not without risk for the future mother, who turns out to be more vulnerable to certain pathological complications. The consequences of infection with SARS-CoV-2 in pregnant women pose many questions to doctors and researchers.

Women's counseling plays an important role in proper behavior (to prepare the pregnant woman for the process of childbirth, to inform about all risks related to pregnancy and childbirth, to inform and conduct prevention of her behavior for the purpose of prevention), as well as all specialists, in case of COVID-19 diagnosis, for non-proliferation and prevention of complications.

Key words: pregnancy, childbirth, COVID-19, obstetric care

INTRODUCTION

Pregnancy is a special physiological condition of a woman. Sometimes it proceeds with complications that threatens the normal development of the fetus and the health of the mother. A number of diseases affect the course of pregnancy and childbirth and are associated with risks for both the mother and the fetus. The birth is carried out in treatment settings by qualified medical professionals of the relevant profile (1-3).

In the last year and a half, COVID-19 caused a number of unpleasant incidents, which drew the attention of specialists and the scientific community to the need for specific care for the pregnant woman, the mother, and the newborn (4, 5). It is believed that COVID-19 is transmitted from person to person in close contact, by the airborne route. Studies are still being conducted on the mechanism of transmission of the virus in women who are infected with COVID-19 to the fetus or the newborn before, during, or after childbirth. The currently available data do not indicate an association between the COVID-19 infection during pregnancy and an increased risk of congenital abnormalities, and the limited data do not indicate an association with an increased risk of miscarriage.

However, COVID-19 during pregnancy is associated with impaired fetal growth and an approximately 2-fold increased risk of stillbirth. Symptomatic COVID-19 is associated with an approximately 3-fold increased risk of preterm birth (possibly influenced by iatrogenic births). With the exception of complications arising from

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preterm birth, the risk of neonatal complications does not appear to increase with the COVID-19 infection during pregnancy (6). Most women who are infected during pregnancy are asymptomatic (70-80%) (7), and the majority of those who become symptomatic experience only mild to moderate symptoms (7). However, natural physiological adaptations to pregnancy lead to changes in the immune and respiratory systems, cardiovascular function, and coagulation, which in turn can affect the progression of COVID-19.

Intensive care and invasive ventilation are more common among pregnant women with COVID-19 than in infected non-pregnant women of the same age (8, 9), the UK obstetric surveillance study identified increased rates of intensive care intake among pregnant women with COVID-19 compared to uninfected pregnant women (10), risk factors associated with severe COVID-19, intensive care intake or invasive ventilation during pregnancy include: maternal age 35, BMI 30 and prior maternal comorbidity, especially chronic hypertension and pre-pregnancy diabetes (8), pregnant women also appear to be at an increased risk of complications in the third trimester compared to earlier pregnancy (7).

EXPOSITION

The pandemic of COVID-19 and all risks associated with it still do not have clear algorithms for therapeutic behavior and control of the spread of the infection. There is still mixed information about whether pregnant women are at an increased risk of COVID-19 compared to other people, or whether their risk of complications is greater.

It is not yet known what the risks for the fetus are if the mother was infected during pregnancy with COVID-19. There have been few reported problems during pregnancy or delivery (preterm birth), but it is not clear at this time whether they are due to the mother's infection with COVID-19 during pregnancy.

Pregnant women are placed in a vulnerable group. This means that pregnant women should reduce social contact through social distance measures. Based on the data and evidence that has been analyzed in various studies so far, it has not been observed that pregnant women are more likely to become infected with COVID-19 than the rest of the population (11-13). In some women, pregnancy can change the way the body deals with severe viral infections.

It is not clear whether the virus crosses the placenta during pregnancy or childbirth. By now, there is no evidence of infecting the baby during pregnancy or birth (5, 14). The virus was isolated in a sample from breast milk (14-16). Vertical transmission cherry transplacental Urgant mechanism is an exclusive redox (0,7% - 0,9%) (6). Documented cases from China have shown that 19 women diagnosed with meningococcal disease can give birth to healthy babies without malformations or disabilities.

A number of restrictions imposed by the pandemic onset (17, 18) have led to the suspension of women's consultations and to gaps in the care of pregnant women. The care of pregnant women in physiological and psychological aspects was transferred to the maternity wards of the medical institutions (18, 19). According to the written instructions of the Ministry of Health and the prepared recommendations, pregnant women are required (11):

• A pregnant woman with symptoms of Covid-19 and having begun labor, or pregnant with obstetric complications, should be transported with the help of emergency care to a medical institution with a maternity ward for receiving specialized medical care. If possible, the medical establishment should be notified in advance by the emergency department, the supervising obstetrician-gynecologist or the doctor.

• The method of childbirth in a pregnant woman with proven COVID-19, is determined by the obstetrician-gynecologist depending on the obstetric indications. According to this: the COVID-19 infection is not an indication per se for giving birth through the cesarean section. Exceptions of the above recommendation are cases in the third trimester with severe complications during pregnancy and the need for respiratory assistance. (13).

• Pregnant women and women in labor are advised to observe with even greater rigor the measures of social distancing and good personal hygiene, as they are more susceptible to infections.

The guidelines of the Ministry of Health (MH) on the conduct of medics in an informed birth refer to (11, 19):

- individual approach, according to obstetric indications and preferences of the woman;
- emergency delivery and termination of pregnancy should be based on factors such as gestational age, the severity of the mother's condition, viability of the fetus;

- implementation of timely multidisciplinary consultations by specialists in obstetrics and gynecology, neonatology, and intensive care;
One would think that the cesarean section method of delivery was safer for the team because of the shorter exposure to the woman giving birth.

RESULTS AND DISCUSSION

Organizational changes have been implemented in the management of the medical institution Specialised Hospital in Obstetrics and Gynecology for Active Treatment "Prof. Dr. Dimitar Stamatov" – Varna (SHOGAT - Varna) following orders for the provision of beds for patients with COVID-19 (for 10% by an order of the RHI in connection with an order from October 2020 of the Ministry of Health, and up to 20% of hospital beds, according to an order from November 2020 of RHI). On this basis and preventive measures, taken at SHOGAT - Varna, as a specialized hospital for medical care, specific organizational measures were introduced, aimed at minimizing the risk of spread of infection in hospital conditions and to create comfort for the hospitalized patients in the first month after the announcement of the pandemic in Bulgaria on 13.03.2020.

The necessary activities were carried out for introduction and adaptation to the requirements of the standard on in-hospital infections (INI), the regulations for combating INI, the disinfection plan and program of information from the National Center for infectious and parasitic diseases (NCIPD) „algorithm of disinfection events in sites with public use in the conditions of epidemic spread of COVID-19". According to the provisions for restructuring of the medical institutions, determined by an order of the Mayor for the city of Varna, as leading in the fight against COVID-19, structural units in other hospitals on the territory of Varna were closed. SHOGAT - VArna admitted all gynecological cases and the largest share of cases of pathological pregnancy, pregnant women, and parturition with a suspicion and/or with confirmed COVID-19.

SHOGAT - Varna reorganized the activities of its wards in order to ensure the flow of patients, suspected or proven for having the infection. In accordance with the orders of the Regional Health Inspectorate, due to the increased incidence, the planned admission as well as the planned operations were repeatedly suspended. The management of the medical institution provided for the functioning of SHOGAT - Varna contractual relations with other medical institutions in terms of diagnostics and treatment (for diagnostics; specialists with different profile orientations, assisting the clarification of the Diagnostic and treatment plan), as well as in case of inability to provide the necessary treatment, translation into multi-profile TH with a higher level of competence of resuscitation. Through internal regulatory rules, consultative examinations with the relevant specialists are organized, aimed at helping the management of the accompanying pathology and the processes of postnatal care. Rules were laid down for the organization of the activities of the structures, related to the performed activity. The elaborated rules of work ensured the processes in the healing structures and the continuity of the care provided, ensuring and improving their quality.

Although HT does not meet the mandatory requirements of clinical pathway 104, it provides care to patients with concomitant COVID pathology, ensuring the quality of medical care through a reorganization of structures, processes, and resources related to obstetric care and aimed at meeting the needs of its patients in pandemic conditions.

During the period October 2020 - June 2021, 28 pregnant women with accompanying COVID infection passed through the hospital – 21 of them ended with childbirth, and 7 pregnant women passed through the structure of the Department of Pathology of pregnancy (DPP). 14.28% were with concomitant pathology requiring life-saving measures due to aggravating COVID infection.

Pregnant women with the COVID infection were diagnosed at the beginning of the third trimester, and the infection was diagnosed for 57.14% in outpatient settings, and the rest in the course of hospitalization due to increased uterine contralto, fever, suspected rupture of the amniotic bladder and preeclampsia. Diagnostic measures were taken for all pregnant women – laboratory tests (hematological and microbiological; diagnostics), cardiotocographic monitoring, ultrasound examination, and Doppler. The necessary consultative examinations with an anesthesiologist, an internist, and an infectious disease specialist were carried out. The healing activities were in accordance with the condition – intravenous infusions of water-salt solutions,

biological products, antibiotic therapy, antispasmodics, tocolytics, and corticosteroids. Continuous motoring of the Vital Signs was carried out.

Out of 21 patients, diagnosed with COVID-19 4.76% of the pregnancies were unfavorable, and 18.18% of the pregnancies ended with a premature birth. Most pregnant women have given birth by Caesarean section (19 out of 21) due to obstetric reasons (aggravated obstetric history, multiple pregnancy and eclampsia, foetus Mortus and eclampsia, extragenital pathology requiring surgical birth resolution of pregnancy) **(Figure 1).**

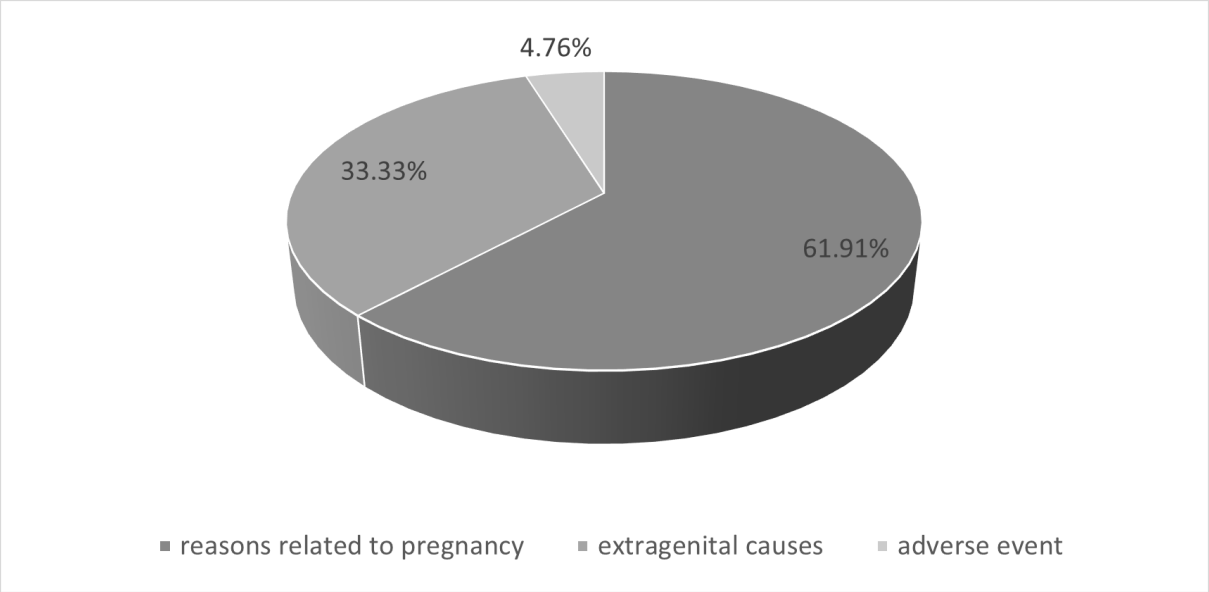

Figure 1. Reasons for surgical birth

The mothers and newborns were given quality obstetric and neonatal care aimed at improving the condition of the patients in compliance with the requirements for the Organization of the structures in the health institutions serving patients with suspected or proven COVID infection.

On all born babies, an antigenic COVID test was conducted at the 30th hour, all results were negative. Each structure has developed its own algorithms, according to the standards, guidelines, and recommendations for the care of mothers and newborns from the structures.
All newborns were isolated from their mothers until the results came out, after which, depending on the desire of the mothers, the breastfeeding process was carried out. The structure prepared guidelines in line with the WHO guidelines: a breastfeeding guide intended for mothers with a positive result or in the process of testing for Covid-19. All mothers with COVID were given explanations for the care they should take of their newborns and the breastfeeding process:
- Breast milk is the best and most complete food for babies, for Covid-19 there is no definitive data on vertical transmission, and whether and how to start or continue breastfeeding should be determined together with the supervising doctor.
- Mothers and infants can stay together and have skin-to-skin contact, and kangaroo care, as they can be together throughout the day and night in the same room, especially immediately after birth when starting breastfeeding, regardless of whether they are infants with suspected or confirmed COVID-19 infection.
- The guidelines for the discharge of newborns from TH refer to exclusive breastfeeding should last for 6 months; timely introduction at six months of age of adequate, safe, and appropriate complementary foods, while breastfeeding continues until 2 years of age or more; earlier initiation of breastfeeding leads to greater benefits (has a dose-response effect); mothers who are unable to start breastfeeding within the first hour after delivery should be supported to breastfeed as soon as possible (this refers to mothers who give birth by cesarean section, after anesthesia, or those who have medical instability that does not allow breastfeeding to begin within the first hour after delivery).

These recommendations are in line with a global strategy for feeding babies and young children, endorsed by the Fifty-fifth World Health Assembly in a resolution in 2002, to

promote optimal nutrition for all babies and young children.
- Take all possible precautions to avoid infecting the baby, including washing hands before touching the child and wearing a face mask when in contact with the child and while breastfeeding.

CONCLUSION

By now there is no evidence that pregnant women with Covid-19 are at greater risk of serious complications than all other patients in good general health. The main motivation for placing pregnant women in a vulnerable group is caution regarding the sudden complications associated with pregnancy and childbirth, as well as the subsequent adaptation of the newborn. Some viral infections are more common in pregnant women. At the moment there is no indication that this is the reason for coronavirus infection, but the available evidence is still quite limited.

The past period of the COVID pandemic showed that the Twenty-First Century is the era of healthcare. This fact is mainly due to the rapid development of diagnostic, therapeutic, and pharmaceutical medical technologies, which, on the one hand, contribute to the treatment of unknown and/or incurable diseases and conditions, and, on the other hand, „accumulate“ them and lead to the rapid spread of new and difficult ones to treat.

The implementation of fast and adequate activities in pregnant and parturient women with COVID-19 requires the implementation of all necessary measures for timely obstetric care, which will affect the quality of Health Obstetric Care.

REFERENCES

1. Health law, *State gazette* №.21 at 12.03. 2021 last am. and app.
2. The law on medical institutions. *State gazette* №.11 from 9.02.2021 last am. and app.
3. Regulation on the implementation of the right of access to medical care. *State gazette* (last am. and app.) №107 of 18 December 2020.
4. Preterm care during the COVID-19 pandemic: A comparative risk analysis of neonatal deaths averted by kangaroo mother care versus mortality due to SARS-CoV-2 infection – Announcement: *EclinicalMedicine* (thelancet.com)
5. Small and sick newborn care during the COVID-19 pandemic: global survey and thematic analysis of healthcare providers' voices and experiences. Announcement |*BMJ Global Health.*
6. New research highlights risks of separating newborns from mothers during COVID-19 pandemic (who.int)
7. *Royal College of Obstetricians and Gynaecologists.* Available from: www.rcog.org.uk/coronavirus-pregnancy. 2021.
8. Allotey, J., E. Stallings, M. Bonet, M. Yap, S. Chatterjee, T. Kew, L. Debenham, A.C. Llavall, A. Dixit, D. Zhou, R. Balaji, S.I. Lee, X. Qiu, M. Yuan, D. Coomar, M. Van Wely, E. Van Leeuwen, E. Kostova, H. Kunst, A. Khalil, S. Tiberi, V. Brizuela, N. Broutet, E. Kara, C.R. Kim, A. Thorson, O.T. Oladapo, L. Mofenson, J. Zamora, and S. Thangaratinam, Clinical manifestations, risk factors, and maternal and perinatal outcomes of coronavirus disease 2019 in pregnancy: Living systematic review and meta-analysis. *The BMJ*. 2020, 370-370.
9. Collin, J., E. Byström, A. Carnahan, and M. Ahrne. Pregnant and postpartum women with severe acute respiratory syndrome coronavirus 2 infection in intensive care in Sweden. Public Health Agency of Sweden's Brief Report, *Acta Obstetricia et Gynecologica Scandinavica*. 2020; 99(7):819-822.
10. Knight, M., K. Bunch, N. Vousden, E. Morris, N. Simpson, C. Gale, P. Obrien, M. Quigley, P. Brocklehurst, and J.J. Kurinczuk, Characteristics and outcomes of pregnant women admitted to hospital with confirmed SARS-CoV-2 infection in UK: *National population-based cohort study. The BMJ*. 2020; 2:369-369.
11. Expert Council on medical specialty „Obstetrics and gynecology“. *Recommendations expert group.*
12. *Guideline 2020*. COVID-19 Virus Infection and Pregnancy.
13. MH. *Press releases of the Ministry of Health.* https://coronavirus.bg/bg/97.M3 https://coronavirus.bg/bg/97
14. Centre for Disease Control. *Press releases of the CDC*. https://www.cdc.gov/
15. Royal College of Midwives and Royal College of Obstetricians Gynaecologists. Coronavirus (COVID-19) Infection in Pregnancy. *Announcement*, 2021; Available from: www.rcog.org.uk/globalassets/documents/g

uidelines/2021-08-25-coronavirus-covid-19-infection-in-pregnancy-v14.pdf.
16. WHO: Global Strategy for Infant and Young Child Feeding. *Announcement.* (https://apps.who.int/iris/bitstream/handle/10665/42590/9241562218.pdf)
17. National Center for infectious and parasitic diseases "algorithm of disinfection events in public sites in the conditions of epidemic spread of COVID-19". *Announcement.*
18. Who: Essential Newborn Care and Breastfeeding. *Announcement.* (https://apps.who.int/iris/bitstream/handle/10665/107481/e79227.pdf
19. Ordinance apostille 3/6.10.2017 for the approval of the medical standard „Emergency medicine".