QUALITY OF THE CLINICAL MATERNAL AND NEONATAL HEALTHCARE ASSESSMENT IN A TERTIARY PUBLIC MATERNITY HOSPITAL IN R. MACEDONIA

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ABSTRACT

Introduction: Maternal and neonatal infections can be prevented, but they are still common in low and middle-developed countries. There is a connection between childbirth on one hand and postpartum and newborn care on the other. Globally, several efforts are being made to improve quality of childbirth by providing initial assessment of procedures, risk prevention and continuous monitoring of childbirth process and possible complications. The World Health Organization has developed Checklists for Safe Delivery with procedures to be implemented as routine care, in order to promptly detect and manage complications related to childbirth.

Material and Methods: A retrospective study was conducted in the University Clinic of Gynecology and Obstetrics in Skopje, a maternity hospital in R. Macedonia from the tertiary level of the public health care system. In this study 300 obstetric and 307 neonatal histories from childbirths in February and March 2018 have been analyzed. The collected data refers to the care of the prepartum, intrapartum, early postpartum and early neonatal periods.

Results: An initial assessment at admission proved that 14.7% of pregnant women had existing infection, in 93% of them the body temperature was measured and in only 9.3% urine analysis was made, 10.3% of the women had arterial hypertension, and 66.5% of them with hypertension had a headache. In the continuous monitoring and prevention of potential risk, arterial tension was measured in 33% of all mothers. In all women the placenta quality was checked up, as well as vaginal bleeding, application of oxytocin and hemoglobin level before discharge.

Conclusion: The quality and quantity of documented data in the maternity hospital medical histories is high. There were no standard protocols for assessment of pregnant women. Certain procedures are conducted in every woman during childbirth. Standardized procedures are needed to be applied during every childbirth.

Keywords: delivery, risk factors, quality, prevention

INTRODUCTION

Infections and mortality in mothers and infants in most cases can be prevented, but they are still very common in low and middle-developed countries. Most of the causes of maternal death are directly related to delivery, such as postpartum hemorrhage, pregnancy-related hypertension, or septic infection. More than 45% of maternal deaths occur within the first 24 hours after delivery [1]. The most common

causes of neonatal death are associated with delivery, such as neonatal asphyxia, prematurity, and septic infections. Approximately 25-45% of neonatal deaths are in the first 24 hours after birth, and about 90% in the first 48 hours of neonatal life [2, 3].

There is a connection between delivery on one hand and the postpartum and neonatal period on the other. That means if the delivery passes without complications it is expected that the early postpartum period of the woman and the early neonatal period of the neonate will pass without complications. So, there is a connection in the care that begins with labor and continues in the postpartum period of the woman and the care of the newborn in the early neonatal period [4].

Assuming a pregnant woman arrives at a maternity unit around the onset of labour and stays in the hospital for 1-2 days after childbirth this interval spans over 2-4 days. During this period the woman and the newborn spend the most vulnerable period of their lives [5].

Clinically, patient management during the intrapartum, immediate postpartum and postnatal periods can be divided into routine and emergency processes. Routine care procedures should be performed in each pregnant woman and they should include essential monitoring procedures. This monitoring involves procedures for early detection and prevention of maternal and neonatal infections, monitoring of maternal arterial tension, especially if it is a pregnancy-connected, postpartum haemorrhage, Apgar score of the neonate, body temperature measurement of the newborn, early assessment of foetal and neonatal distress [6, 7].

Emergency medical care includes clinical procedures that need to be provided rapidly in order to medically manage or stabilize a patient with a life-threatening complication [8, 9].

Globally, several efforts have been made for improving the quality of childbirth care. The World Health Organization (WHO) has been developing Safe Childbirth Checklists, designed as a tool to improve the quality of care provided to women giving birth. The Checklist is an organized list of evidence-based essential birth practices, which targets the major causes of maternal deaths, intrapartum-related stillbirths and neonatal deaths that occur in health-care facilities around the world. Each Checklist item is a critical action that, if missed, can lead to severe harm for the mother, the newborn, or both [10].

According to WHO, childbirth is a complex process, and it is essential to remember to provide everything that is needed to ensure that both the mother and the newborn child receive the safest care possible. Checklists are useful tools to organize such complex and important processes — they have long been used to prompt users to remember essential tasks to deliver better and safer care in a variety of settings [11, 12].

MATERIAL AND METHODS

A retrospective study was conducted in the University Clinic of Gynaecology and Obstetrics in Skopje, a maternity hospital in R. Macedonia that belongs to tertiary health care level. In this study 300 obstetric and 307 neonatal histories from childbirths in February and March 2018 have been analysed. The data collected were related to the prepartum, intrapartum, early postpartum and early neonatal periods. The data were included in a questionnaire containing appropriate questions for the detection of risk factors in pregnant woman at the time of admission in the maternity unit, before, during and immediately after delivery. The questionnaire was prepared according to the WHO Checklists for safe childbirth. The questions were divided into four groups. Each group of questions refers to one of the four critical periods of delivery that are included in the WHO Safe Checklist. The first and second group of questions referred only to the pregnant women and the third and fourth group related to the mother after the delivery and the newborn.

For data processing and presentation of obtained results, several statistical methods and tests were used for displaying frequencies by numbers and percentages, and to test significance of differences of variables with the Pearson or X2 test (Chi - square test) or t - test.

RESULTS

The study was focused on clinical procedures for timely detection of risk factors during childbirth and indicate the quality of medical care in the intrapartum, early postpartum and neonatal periods. Clinical procedures in the study are divided into the following four categories: 1) Initial assessment of risk factors in pregnant women at the time of admission in maternity unit; 2) Continuous monitoring of possible risk factors just prior to the labour or Section Caesarean; 3) Prevention of potential risks factors at the time immediately after delivery; and 4) Assessment of the risk factors at the time of discharge from the maternity hospital.
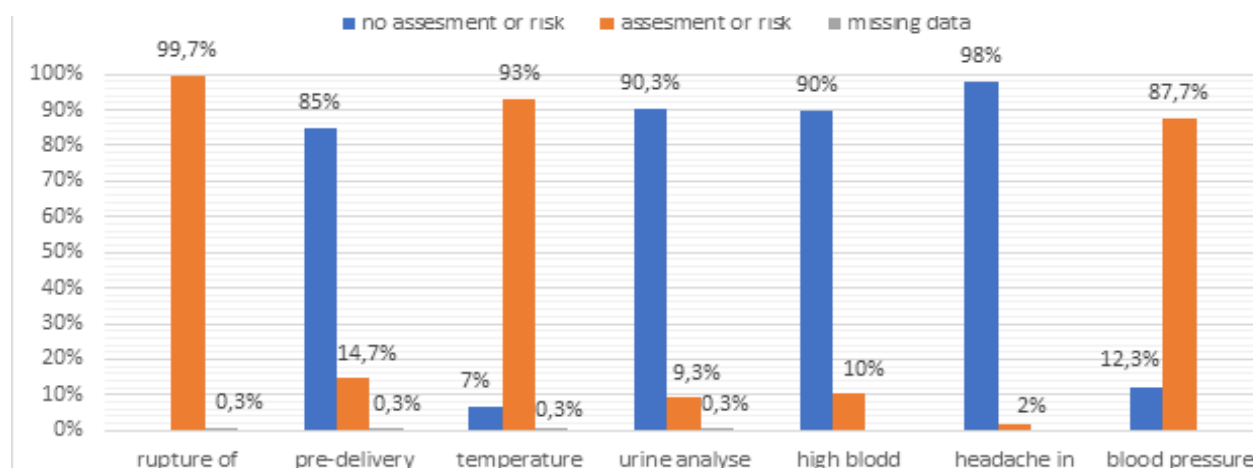
Chart 1. *Risk assessment in pregnant women at the time of admission in maternity unit*

1. Initial assessment of risk factors in pregnant women at the time of admission in maternity unit

The initial assessment of risk factors is essential in the beginning of each delivery when the pregnant woman is admitted in the maternity unit. According to the WHO checklist, checking the mother at the time of admission is important to detect and treat complications that she may already have, to prepare her for labour and delivery, and to educate her about danger signs for which she should call for help. This assessment is based on the medical history of the patient for previous illnesses, as well as on the basic physical and laboratory examinations. These procedures evaluate the cardiovascular status of the pregnant woman (measurement of arterial tension, urine proteins, peripheral oedema), risk of birth-related infection (rupture of mammalian sheaths, body temperature, urine analysis), but also evaluation of signs of foetal distress.

The presence of infection before birth is an important initial risk factor, both for the future mother and for the newborn. In the study, the presence of symptoms of infection before delivery was recorded in 14.7% of the pregnant women, and higher percentage (85%) were without symptoms for infection. The percentage difference is statistically significant for p <0.05 (Chart 1).

Almost all pregnant women, 99.7% of them, have been observed a time of rupture of membrane (mammalian sheets) before delivery, and in one woman the data was missing (Chart 1).

Body temperature was measured in 93.0% of pregnant women on admission in maternity unit, and in 6.7% were not measured. The percentage difference is statistically significant for p <0.05 (Chart 1).

Analysis of urine was performed only in 9.3% of the analysed subjects, and in the largest percentage,

even 90.3%, this analysis was not performed. The percentage difference is statistically significant for p <0.05 in relation to unrealized analysis (Chart 1).

The initial risk includes the measurement of arterial blood pressure. In our cases in over 87% arterial tension at the admission was measured. During pregnancy, hypertension (HTA) was recorded in 31 woman, which is 10.3% of the whole sample of examinees (Chart 1).

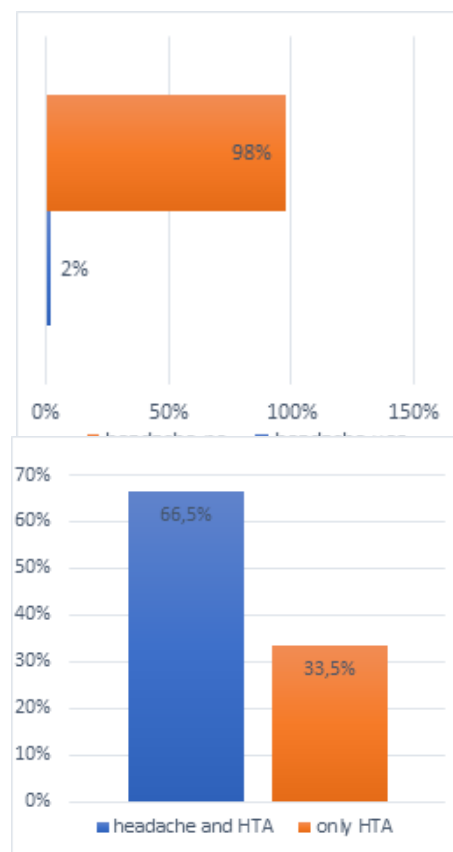Among the pregnant women with HTA 66.5% were reported to have headache (Chart 2).

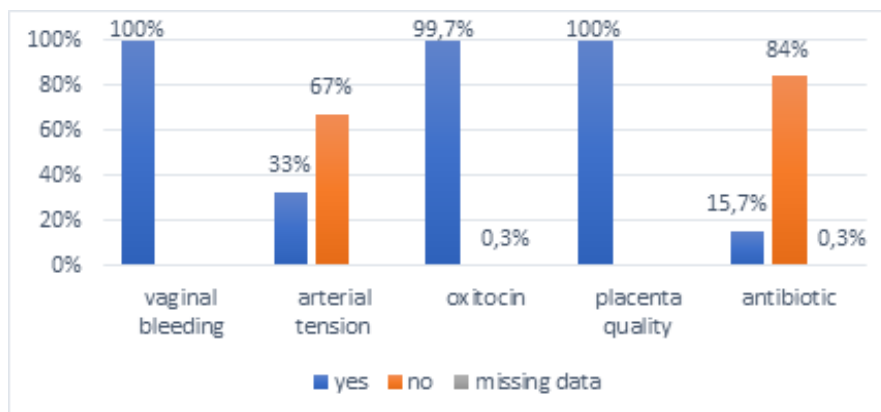**Chart 2.** *Headache and arterial hypertension during present pregnancy*

Chart 3. *Risk assessment immediately after delivery*

In all patients/pregnant women in the medical history the time when the birth has started was registered, as well as the cardiac frequency of the foetus and the position of the foetus in the uterus.

2. Continuous monitoring of possible risk factors just prior to the labour or Section Caesarean

Continuous monitoring covers the time immediately prior to delivery, that is, to the beginning of labour or immediately prior to starting a Caesarean section. According to the WHO Checklist, checking the mother just before pushing (or before Caesarean) is important to detect and treat complications that can occur during labour and to prepare for routine events and possible crisis situations that may occur after birth. This important monitoring refers to the monitoring of delivery, which includes monitoring of pain before labour, monitoring of foetal heart frequency (through cardiotocography) and monitoring of foetal movement.

For all pregnant women the position of the foetus, heart frequency (by cardiotocograph), and foetal movement was assessed and registered in the medical history.

3. Prevention of potential risks factors at the time immediately after delivery

Prevention of potential risk involves procedures that should be routinely performed immediately after delivery to prevent the development of complications. According to the WHO Checklist for Safe Childbirth, checking the mother and newborn soon after birth is important to detect and treat complications that can occur after delivery, and to educate the mother (and her companion) about the danger signs for which she should call for help. Postpartum haemorrhage prevention involves the use of oxytocin immediately after delivery, placental screening, measurement of haemoglobin level after delivery and measurement of the arterial tension of mother. It is obligatory to assess the Apgar score in each newborn immediately after delivery, measurement of body temperature and vital signs, in order to timely detect neonatal distress.

The arterial pressure was measured in 33% of mothers after delivery and was not measured in 67% of them. The percentage difference was statistically significant for $p < 0.05$ (Chart 3).

Table 1. *Apgar score of the newborn in the 1st and 5th minutes after birth*

Apgar scoring	Apgar score at the 1st min. after birth N° newborn	Apgar score at the 1st min. after birth %	Apgar score at the 5th min. after birth N° newborn	Apgar score at the 5th min. after birth %
0	0	Low (8 newborn) (2.5%)	1	Low (6 newborn) (1.9%)
1	5		3	
2	2		1	
3	1		1	
4	5	Fairly low (33 newborn) (10.5%)	2	Fairly low (17 newborn) (5.4%)
5	12		4	
6	16		11	
7	33	Normal (266 newborn) (85.8%)	21	Normal (284 newborn) (91.61%)
8	210		36	
9	21		211	
10	2		16	
No data	3	0.9%	3	0.9%

Oxytocin was applied in 99.7% of the mothers after delivery (Chart 3).

All patients underwent placental screening and assessment of vaginal bleeding after delivery (Chart 3).

The Apgar score of the newborn was evaluated at the first, the fifth and the tenth minute after birth. Apgar value of 7 and higher is usually normal, 4 to 6 moderately abnormal, and 3 and lower is low or abnormal with frequent need for resuscitation of the newborn.

The levels of Apgar were lower than 3 i.e. 2.5% and 1.9% of newborn in the first and the fifth minute after birth respectively. The Apgar values were moderately abnormal i.e. 33 (10.5%) and 17 (5.4%) of newborn in the first and the fifth minute after birth respectively. Normal Apgar was registered in 266 (85.8%) and 284 (91.6%) of newborn in the first and the fifth minute after birth respectively (Table 1).

Immediately after birth, the body temperature was measured in 70.6% of the newborn and was not measured in 28.4%. The percentage difference was statistically significant for $p < 0.05$ (Chart 4).

In the total number of newborn, body temperature was measured in 70.6% and it was not measured in 28.4% of newborn (Chart 4).

The average bodyweight of the newborn in the examined group was 3032.7 ± 803.3g. Just in 3 newborn the data on body weight were missing, and one delivery ended with the birth of a stillborn (Chart 5).

4. Assessment of the risk factors at the time of discharge from the maternity hospital

Checking the mother and the baby before discharge is an important procedure to make sure the mother and baby are really healthy before leaving the maternity hospital, or if they need antibiotic, then checking the mother's blood pressure, the level of vaginal bleeding that is indirectly estimated through the level of haemoglobin in the blood before and after delivery. At the same time, the mother and the family are educated for danger signs to look out for, both in the mother and her baby.

The average haemoglobin value in the blood taken before delivery was 117.8 ± 12.7 g /l and is below the reference values (120-180 g/l) in 147 births. The average value of haemoglobin after delivery, measured in 296 women, was 107.9 ± 13.1 g /l and is below the reference values (120-180 g/l). According to the t-test, the difference in mean haemoglobin pre and post-delivery is statistically significant for $p < 0.05$ (Chart 6 and Table 2).
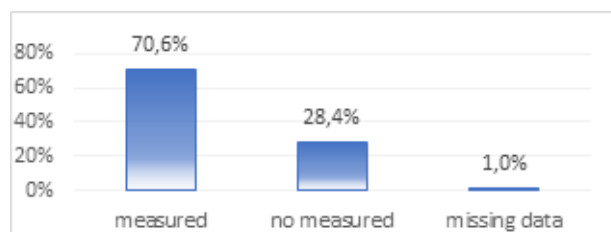

Chart 4. *Measuring the body temperature of the newborn immediately after birth*
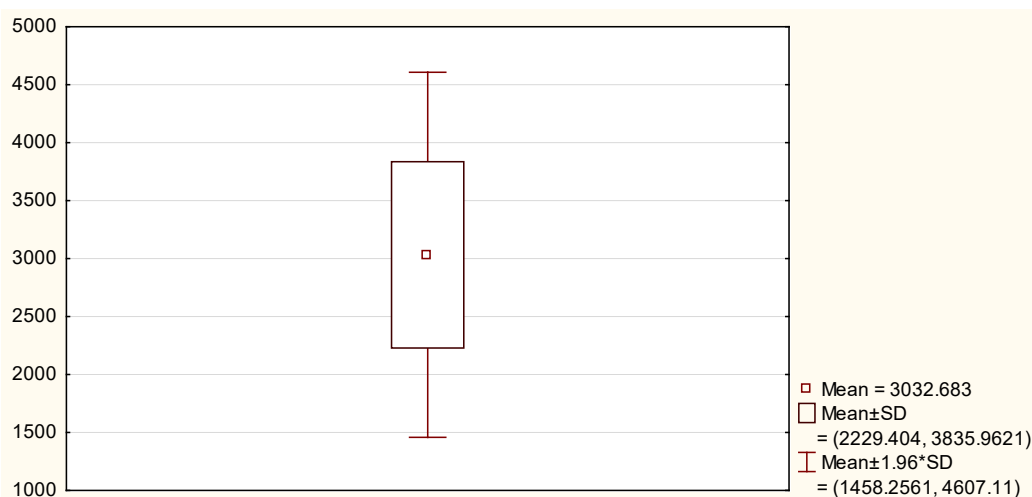

Chart 5. *The average bodyweight of the newborn at birth*

Chart 6. *The average haemoglobin values in women before and after childbirth*

Table 2. *Mean haemoglobin (g/l) values in women before and after delivery-t-test*

Average-before	Average-after	t-тест	P	Nº before	Nº after	Std. dev. before	Std. dev. after
117.8	107.9	7.640838	0.000000	147	296	12.65057	13.09176

Antibiotics on discharge from hospital were given to 15.7% of the mothers and in a greater percentage of 84% were not given, so the percentage difference was statistically significant for p <0.05 (Chart 7).
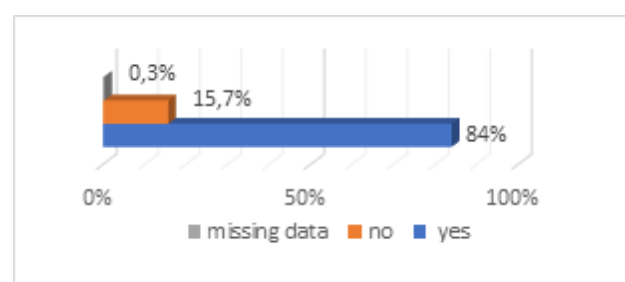

Chart 7. *Antibiotics given to mothers at time of discharge from the hospital*

Antibiotic before discharge from the hospital were given to 37.1% of the newborn and in a larger percentage of 62.2% the newborn left the maternity hospital without an antibiotic, meaning the percentage difference was statistically significant for p <0.05 (Chart 8).
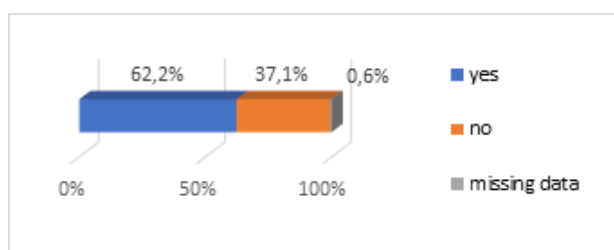

Chart 8. *Antibiotics given to the neonates at the time of discharge from the hospital*

DISCUSSION

Discovering the presence of infection in the pregnant women is an important initial risk factor for health of the future mother and of the foetus and newborn. Infection in the pregnant women can be a cause for premature birth, can directly affect the health of the woman, and can also lead to the birth of a newborn with a perinatal infection. In our study, the presence of infection was registered in 14.7% of the pregnant women. Tyagi M. and Singh S., 2018, reported that only 3% of mothers have

infection before delivery [13]. Infection, along with certain clinical signs, such as increased body temperature, would also mean the need for ordinating an antibiotic to the pregnant women during admission to maternity hospital, as it is advised in the WHO Check Lists for safe delivery [14].

In the study of the mentioned authors [13], the arterial tension was measured in 91% of the women before childbirth, and the body temperature was measured before delivery in 89% of the women, which corresponds to the result obtained in our study. Over 87% of the mothers were with measured arterial tension and in 93% of them the body temperature was measured before delivery. The data from our study suggest that 66.6% of mothers with arterial hypertension had an accompanying symptom-headache, indicating an increased risk both, for the health of the future mother and foetus.

In a study by Brenner S, et al., 2015, only 1% of the examined cases had analysed the urine before delivery [15]. In our study, this percentage is higher (9.3%), but it is far from satisfactory, as the urine analysis was done only in case of indication on hypertension or urinary infection. According to the recommendations from the WHO Check List, it is stated that pregnant women should receive magnesium sulphate if the diastolic arterial pressure is 110 mmHg or higher and has 3+ proteinuria, or if the diastolic arterial pressure is 90 mmHg or higher accompanied with 2+ proteinuria and presence of headache. Thus, simultaneous measurement of arterial tension and analysis of protein in the urine are important for the initial assessment of the risk factors for the future mother, but also for her newborn.

Apgar score assessment in a number of clinical and population studies has proven to be a predictive factor for morbidity and mortality in neonates. In the study of Siddiqui A, et al, 2017, an international comparison of Apgar score was presented, and it was found that 0.3-2.4% of newborn at birth had Apgar score below 7, and 72.9-96.8% were with Apgar from 9-10 [16]. In our study, the percentage of newborn with Apgar below 7 was 13.1% in the first minute after birth, and Apgar over 7 had 85.8% of the newborn, also in the first minute after birth. Further research and conclusions are needed about the high percentage of newborn with Apgar score below 7 in our study, compared to other studies.

The birth weight of the neonates is a strict predictor of infant morbidity and mortality, and it applies equally to lower and higher birth weight. Lower weight is associated with an increased risk of morbidity and mortality in infancy, and overweight is associated with an increased risk of infant mortality, adult obesity and complications in childbirth requiring ending the pregnancy with a Caesarean section. In our study, the median weight of the newborn is 3032 g., which is lower in relation to the mean weight of the newborn in England and Wales, which was 3276 g. in 2012, in a study presented by Ghosh RE et al, 2018 [17]. Such a difference may be due to the genetic characteristics of the population, but it may also refer to certain nutrition and health characteristics of the diet and other health related life style factors in pregnant women.

Measurement of haemoglobin levels in women before and after childbirth is an important laboratory procedure that indirectly reveals the level of postpartum bleeding. In our study, the average haemoglobin values after delivery (107.9 g/l) are statistically significantly lower, than before delivery (117.8 g/l), and the difference between delivery and postpartum haemoglobin values is 10 g/l, suggesting a significant blood loss during and after childbirth, despite the fact that oxytocin is administered immediately after delivery. In a study presented by Miller CM, 2016, the haemoglobin difference before and after delivery is 1.4 g/l, and in the study of Emegoakor CF, et al, 2016, it is 0.6 g/l [18, 19]. Also, our pregnant women before delivery, according to the obtained data, are with anaemia, which may be the cause of increased postpartum vaginal bleeding, and therefore a greater difference in the haemoglobin values before and after delivery.

Persaud RR, et al, 2015, in his study reveals that 45% of newborn in Canada are exposed to antibiotic use and said that this high percentage is due to routine prescription of antibiotics in the newborn [20]. In our study, 37.1% of the newborn in the early neonatal period received antibiotics, which can indicate an increased incidence of infections in the newborn or also suggest routine prescribing of antibiotics in newborn.

CONCLUSION

The quality and quantity of documented data in obstetric and neonatal histories are high. The data obtained indicate that standardized pro-

tocols were not practiced to detect possible risk factors during pregnancy and childbirth in pregnant woman/mother and newborn.

Because of the lack of standardized protocols for delivery, procedures for safe delivery are not carried out at each childbirth. Anyhow, there is a good continuous monitoring of delivery and good care during discharge from the maternity, especially monitoring of anaemia and infection in mothers.

By introducing Safe Delivery Checklists, created under the WHO Safe Delivery Checklist and adapted to our medical practice, we will ensure equal care for each pregnant woman/mother and newborn, which will reduce morbidity and mortality in these vulnerable groups and will improve the prenatal, perinatal and postnatal care in R. Macedonia.

REFERENCES

1. World Health Organization. Global Health Observatory (GHO) data: Maternal mortality, 2015. Available at: http://www.who.int/gho/maternal_health/mortality/maternal_mortality_text/en/.
2. Lawn JE, Lee AC,Kinney M,Sibley L,Carlo WA,Paul VK, et al. Two million intrapartum-related stillbirths and neonatal deaths: where, why, and what can be done? Int J Gynecol Obstet.2009; 107: 5–19.
3. Lawn LE, Cousens S, Zupan J. 4 million neonatal deaths: When? Where? Why? The Lancet. 2005; 365: 891–900.
4. World Health Organization. Packages of interventions for family planning, safe abortion care, maternal, newborn and childhealth. Geneva: World Health Organization; 2010.
5. Lawn JE, Kinney M, Lee AC, Chopra M, Donnay F, Paul VK, et al. Reducing intrapartum-related deaths and disability: Can the health system deliver? IntJGynecolObstet. 2009; 107, Supplement: 123–42.
6. World Health Organization. Making pregnancy safer: the critical role of the skilled attendant: A joint statement by WHO, ICM and FIGO. Geneva: World Health Organization; 2004.
7. American Academy of Pediatrics Committee on Fetus and Newborn; American College of Obstetricians and Gynecologist Committee on Obstetric Practice. The Apgar Score. Pediatrics. 2015 Oct; 136(4): 819–22.
8. De Berins L, Sherratt DR, AbouZahr C, Van Lerbegrhe W. Skilled attendance for pregnancy, childbirth and postnatal care. Br Med Bull. 2003; 67: 39–57.
9. Yakoob MY, Ali MA, Ali MU, Imdad A, Lawn JE, Van Den Broek N et al. Tge effect of providing skilled birth attendance and emergency obstetric care in preventing stillbirths. BMC Public Health. 2011; 11: S7.
10. World Health Organization. Standards of care to improve maternal and newborn quality of care in facilities, 2017. Available at: www.who.int/maternal_child_adolescent/topics/quality-of-care/quality-of-care-brief-standarts.pdf.
11. World Health Organization. WHO safe childbirth checklist implementation guide: improving the quality of facility-based delivery for mothers and newborns. WHO. 2015.
12. Perry WRG, Bagheri Nejad S, Tuomisto K, Kara N, Roos N at al. Implementing the WHO Safe Childbirth Checklist: lessons from a global collaboration. BMJ Glob Health. 2017; 2(3).
13. Tyagi M, Singh S. Quality of assessment of women at the time of admission for childbirth in secondary and tertiary public sector referral institutes in southern India. Int J Community Med Public Health. 2018 Mar; 5(3): 1100–08.
14. World Health Organisation. WHO Safe Childbirth Cheklists. 2015 Dec. Available at: https://www.who.int/patientsafety/topics/safe-childbirth/childbirth-checklist/en/.
15. Brenner S, De Allegri M, Gabrysch S, Chinkhumba J, Sarker M, Muula AS. The quality of clinical maternal and neonatal healthcare - a strategy for identifying 'routine care signal functions'. PLoS One; 2015 Apr 15: 10(4).
16. Siddiqui A, Cuttini M, Wood R, Velebil P, Delnord M, Zile I at all. Can the Apgar Score be Used for International Comparisons of Newborn Health?. Pediatrician Perinat Epidemiol. 2017 Jul; 31(4): 338–45.
17. Ghosh RE, Berild JD, Sterrantino AF, Toledano MB, Hansell AL. Birth weight trends in England and Wales (1986-2012): babies are getting heavier. Arch Dis Child Fetal Neonatal Ed. 2018 May; 103(3).
18. Miller CM, Ramachandran B, Akbar K, Carvalho B, Butwick AJ. The impact of postpartum hemoglobin levels on maternal quality of life after delivery: a prospective exploratory study. Ann Hematol. 2016 Dec; 95(12): 2049–55.
19. Emegoakor CF, Iyoke CA, Ezegwui HU, Umeora OU, Lawani LO, Madu AJ. Rates and determinants of peripartum and puerperal anemia in Enugu, Nigeria. Niger J Clin Pract. 2016 Nov-Dec; 19(6): 709–14.
20. Persaud RR, Azad MB, Chari RS, Sears MR, Becker AB, Kozyrskyj AL. CHILD Study Investigators. Perinatal antibiotic exposure of neonates in Canada and associated risk factors: a population-based study. J Matern Fetal Neonatal Med. 2015 Jul; 28(10): 1190–95.

Резиме

КВАЛИТАТИВНА ПРОЦЕНА НА ЗДРАВСТВЕНАТА ГРИЖА КАЈ МАЈКИТЕ И НОВОРОДЕНЧИЊАТА ПОВРЗАНА СО ПОРОДУВАЊЕТО ВО ИНСТИТУЦИЈА ОД ТЕРЦИЈАРНА ЗДРАВСТВЕНА ЗАШТИТА ВО Р МАКЕДОНИЈА

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Вовед: Инфекциите кај мајките и новородените можат да бидат превенирани, но сѐ уште се чести во ниско- и во средноразвиените земји. Постои поврзаност меѓу породувањето и постпарталниот и неонаталниот период. Глобално, се прават напори за поквалитетна грижа околу породувањето, со спроведување иницијални процени на процедурите и превенција на ризиците и континуиран мониторинг на породувањето и на можните компликации. Светската здравствена организација разви чек-листи за безбедно породување со процедури што треба да се спроведат како рутинска грижа, со цел навремено откривање и менаџирање на компликациите поврзани со породувањето.

Материјал и методи: Спроведена е ретроспективна студија на Универзитетската клиника за гинекологија и акушерство во Скопје, родилиште во Р Македонија од терцијарната здравствена заштита во јавниот здравствен систем. Беа анализирани 300 акушерски и 307 неонатални истории и опфатени се породувања во февруари и во март 2018 г. Собраните податоците се однесуваат на препарталниот, интрапарталниот, раниот постпартален и раниот неонатален период.

Резултати: При иницијална процена на прием, 14,7 % од жените имаат инфекција пред породувањето, кај 93 % е измерена телесна температура, кај 9,3 % била направена анализа на урината, 10,3 % родилки имале хипертензија во бременоста, а од нив 66,5 % имале главоболка. Во континуираниот мониторинг и превенција на потенцијалниот ризик, артериска тензија е измерена кај 33 % мајки. Кај сите е направена процена на квалитетот на плацентата и јачината на вагиналното крвавење, апликацијата на окситоцин и измерен хемоглобинот пред испис.

Заклучок: Постои висок квалитет и квантитет на документираните податоци во медицинските акушерски истории. Нема стандардизирани протоколи за ист пристап при секое породување. Определени постапки се спроведени при секое породување. Постои јасна потреба од стандардизирани процедури, кои ќе се применуваат кај секоја родилка.

Клучни зборови: породување, ризик фактори, квалитет, превенција