LWATI: A Journal of Contemporary Research 2024, 21 (4): 152-160
www.universalacademicservices.org

LWATI: A Jour. of Contemp. Res.
ISSN: 1813-222 © Dec. 2024
RESEARCH

PREVALENCE OF OBSTETRIC HEMORRHAGE IN A FIVE-YEAR PERIOD IN A TERTIARY HOSPITAL

Ricardo Mauricio Malagón Reyes[1]
r.malagonreyes@yahoo.com.mx

Lenny Piña Guerrero[1]
superlennyonline@gmail.com

Jorge Antonio Leguizamo Mejía[1,2]
mmfgo670519@hotmail.com

Víctor Hugo Zebadua Jiménez[1]
dr.zebadua@gmail.com

Arturo Harold Juárez Díaz[1]
juarezvonj@hotmail.com

Federico Javier Ortiz Ibarra[1]
dr_javierortiz@yahoo.com

Alexandra Cuellar Santana[3]
alexa20102000.c@gmail.com

Hugo Mendieta Zerón[1,2,3]
drmendietaz@yahoo.com

[1] Maternal-Perinatal Hospital "Mónica Pretelini Sáenz".
[2] Ciprés Grupo Médico CGM SC
[3] Faculty of Medicine, Autonomous University of the State of Mexico.

Correspondence to: Dr. Hugo Mendieta Zerón.
Faculty of Medicine, Autonomous University of the State of Mexico (UAEMéx), Av Paseo Tollocan, 50180 Toluca, Mexico. E-mail: drmendietaz@yahoo.com

LWATI: A Journal of Contemporary Research 2024, 21 (4): 152-160
www.universalacademicservices.org

LWATI: A Jour. of Contemp. Res.
ISSN: 1813-222 © Dec. 2024
RESEARCH

Abstract

While it is true that there is no universal established definition for the concept of "obstetric hemorrhage" it is also true that its presentation as a complication constitutes a major public health challenge. This study was carried out from 2018 to 2022, at the "Mónica Pretelini Sáenz" Maternal Perinatal Hospital (HMPMPS). 27,381 patients were analysed, of which 4,402 presented obstetric hemorrhage: 62% were resolved by cesarean section. About the causes, most of the cases were due to "Tone" and 5% were consequence of coagulopathies. At the HMPMPS, 16% of the patients presented obstetric hemorrhage, which places us below the average in Latin America.

Keywords: blood loss, maternal mortality, obstetric hemorrhage, postpartum, risk factors.

Introduction

Maternal mortality is of main interest in public health in all countries (Ramírez et al., 2020; Borovac Pinheiro et al., 2021). In May 2019, in Geneva, the 72nd World Health Assembly was held, where the Global Strategy for Women's, Children's and Adolescents' Health (2016-2030) was proposed, and the fifth Millennium Development Goal was approved to reduce by three quarters the maternal mortality due to obstetric hemorrhage. However, according to 2020 data, few developing countries achieved the decrease. It is recorded that 75% of maternal deaths in the world are due to severe hemorrhages (World Health Organization, 2023a).

There is no universal definition of obstetric hemorrhage; it can occur antepartum or postpartum hemorrhage (PPH). According to the estimation of blood losses, it can be defined as bleeding greater than 500 mL in the first 24 hours after vaginal delivery, or bleeding greater than 1000 mL after cesarean delivery. Severe obstetric hemorrhage is bleeding of more than 1000 mL in the same period, regardless of the route of delivery (Fong Pantoja& Garcés Suarez, 2023). The Royal College of Obstetricians and Gynaecologists (RCOG) classifies obstetric hemorrhage as: minor (500-1,000 mL); major (> 1,000 mL), this second is subdivided into moderate (1,000-2,000 mL) and severe (> 2,000 mL). Since 2004, a more severe category of obstetric hemorrhage has been defined, which is characterized by blood loss > 2,500 mL, the need for

LWATI: A Journal of Contemporary Research 2024, 21 (4): 152-160
www.universalacademicservices.org

transfusion of more than five units of blood or management of coagulopathy. This type of bleeding is associated with admission to intensive care or emergency hysterectomy (Zaragoza Saavedra, 2020).

The Society of Obstetricians and Gynecologists of Canada in its clinical practice guideline for the prevention and management of PPH summarizes the causes of PPH in relation to abnormalities of one or more of the four basic processes: "4T": corresponding to Tone (70%): uterine atony or inertia, Trauma (19%): uterine trauma (uterine rupture and inversion), lacerations to the neck and vagina, Tissues (10%): retention of placental remains (abnormal placentation) and clots and Thrombin (1%): congenital or acquired coagulopathies (CENETEC, 2021).

In Mexico, it constitutes an enormous challenge for the Public Health System. The general trend in our country is towards the reduction of obstetric hemorrhage. During the year 2022, 644 deaths were recorded with a maternal mortality ratio (MMR) of 33.4 deaths per 100,000 NV. In that same year, the main causes of death were: obstetric hemorrhage (17.4%); hypertensive disease, edema and proteinuria in pregnancy, childbirth and the puerperium (17.2%); abortion (7.1%); respiratory system disease (6.2%) and complications in pregnancy, childbirth and puerperium (6.2%) (Secretaría de Salud, 2022).

The Mexican federal entities with the highest numbers of maternal deaths are the State of Mexico (68), Veracruz (44), Jalisco (43), Puebla (37) and Chiapas (35). Together, they account for 40.4% of the registered deaths. The age group with the highest MMR is 45 to 49 years old. Obstetric hemorrhage is an important cause of maternal morbidity and mortality (Secretaría de Salud, 2022).

In America, one in every five maternal deaths is due to obstetric hemorrhage during or immediately after childbirth. At the same time, it is recognized that 80% of maternal mortality could be avoided with knowledge and appropriate technology (Souza et al., 2023). Without a doubt, before birth it is possible to identify risk factors and their cause (40%) and prevent postpartum hemorrhage, which can still occur in two-thirds of patients (60%) without obvious risk factors. There are parameters that influence the incidence of postpartum hemorrhage; for

LWATI: A Jour. of Contemp. Res.
ISSN: 1813-222 © Dec. 2024
RESEARCH

example: failures in the quantification of blood loss, in the care of the third stage of labor (application of uterotonics, uterine massage, controlled cord traction), obstetric interventions (episiotomy, type of delivery), and the characteristics of the population (Hernández-Morales et al., 2016).

In previous studies, predisposing factors to excessive blood loss in the postpartum were identified: primigravidity, maternal obesity, fetal macrosomia, multiple pregnancy, prolonged labor, chorioamnionitis, preeclampsia, maternal anemia and antepartum hemorrhage. PPH can lead to death in a short period of time, therefore, although it is important to incorporate prevention practices, obstetric hemorrhage is an emergency that requires adequate and timely action by a multidisciplinary team to the management of shock, as well as the availability of blood products. It is also important to identify the risk factors of each patient and establish the treatment plan. The objective of this study is to identify the prevalence of obstetric hemorrhage in pregnant women treated at the Maternity Hospital in a five-year period.

Methods

This was a descriptive, quantitative, cross-sectional study, carried out by collecting data from medical records of pregnant women treated at the "Mónica Pretelini Sáenz" Maternal Perinatal Hospital (HMPMPS), Health Institute of the State of Mexico (ISEM), Toluca, Mexico, in the period 2018 to 2022. The following variables were registered: age, gestation, obstetric resolution, bleeding volume. The data obtained were analyzed by descriptive statistics using IBM SPSS Statistics software. The present study followed the ethical principles of human research stipulated in the Declaration of Helsinki and was considered risk-free since only information from the hospital databases was collected. The study was approved by the Research Ethics Committee of the same hospital.

Results

The medical files of 27,381 patients were analyzed, of which 51% (14,051) were treated by cesarean section: 43% (11,661) by vaginal delivery and 6% (1669) by curettage. Of the 27,381 obstetric patients, 16% (4402) presented obstetric hemorrhage.

LWATI: A Journal of Contemporary Research 2024, 21 (4): 152-160
www.universalacademicservices.org

Of the patients who presented obstetric hemorrhage, 50% (2209) were between 18 and 34 years old; and 2422 (55%) had multiple pregnancies; 62% (2740) of obstetric hemorrhages were resolved by cesarean section. With respect to the causes of obstetric hemorrhage, 74% (3248) was due to "Tone", 14% was due to "Tissue", 7% was due to "Trauma" and 5% was due to "Thrombin".

According to the bleeding classification published by the RCOG; 55% of the patients with obstetric hemorrhage had minor or Grade I bleeding (from 500 to 1000 ml), 30% had moderate major bleeding (Grade II from 1000 to 2000 ml); 10% had severe major bleeding (Grade III from 2000 to 2500 ml) and 5% had severe bleeding or Grade IV (more than 2500 ml). 100% of the patients who presented severe bleeding greater than 2500 ml were sent to intensive care, likewise 42% with major severe bleeding (from 2000 to 2500 ml); 10% with moderate major bleeding (1000 to 2000 ml) and 3% of patients with minor bleeding (500 to 1000 ml) were sent to the ICU. Of the 4402 patients who had obstetric hemorrhage, 226 (5%) ended up in hysterectomy; 0.7% of patients with obstetric hemorrhage died.

Discussion

Obstetric hemorrhage is one of the most alarming complications and a significant contributor to maternal morbidity and mortality, as well as to the development of an important number of serious maternal conditions, usually associated with blood loss (hypovolemic shock and organ dysfunction), leading to long-term disability or, more devastatingly even maternal death (Rivera et al., 2020).

In the words of Dr. Tedros Adhanom Ghebreyesus, General Director of WHO: "Severe bleeding in childbirth is one of the most common causes of maternal mortality, yet it is highly preventable and treatable", and despite being preventable and treatable, PPH continues to cause a significant number of deaths each year (WHO, 2023b).

James A.H. et al. report that, worldwide, one of the leading causes of maternal death is obstetric hemorrhage. And that there are dramatic differences in maternal mortality according to geographic region, country and underlying conditions of women, with most cases occurring in low- and middle-income countries (James et al., 2022).

LWATI: A Journal of Contemporary Research 2024, 21 (4): 152-160
www.universalacademicservices.org

LWATI: A Jour. of Contemp. Res.
ISSN: 1813-222 © Dec. 2024
RESEARCH

According to data from the WHO, in Latin America, about 18.2% of the female population report obstetric hemorrhage as a complication, becoming a major public health challenge (Ramírez et al.; 2020). In this study, most of these 4,402 patients had obstetric hemorrhage after termination of pregnancy by abdominal route (cesarean section), being more than half of the affected population (62%).

Hernández Morales and García de la Torre, state as risk factors for obstetric hemorrhage: maternal age, maternal weight, previous uterine surgeries, fetal weight and parity, being multiparity or nulliparity (Hernández-Morales & García-de la Torre 2016). Garcia-Lavandeira, et al. mention that the occurrence of obstetric hemorrhage has been described more frequently in multiparous puerperal women, and it is associated with a risk of recurrence in subsequent pregnancies (García-Lavandeira et al., 2017). While Combs and collaborators found an important number of nulliparous patients with obstetric hemorrhage, due to the presence of added factors, such as prolonged or instrumented deliveries (Combs et al., 1991).

It calls our attention that, in the HMPMPS, during the period 2018-2022, regarding parity, from 4,402 patients who presented obstetric hemorrhage, 2,422 were multiparous, that is, more than half. On the other hand, if it is compared to the percentages mentioned by Hernández Morales and García de la Torre, (2016), about the causes of postpartum hemorrhage corresponding to: “Tone” (70%), “Trauma” (19%), “Tissue” (10%) and “Thrombin” (1%). It can be observed that in this study, of the “4T”, the one that leads with the highest number of cases, was “Tone” with 74% of the patients, the second was “Tissue” (7%), followed by “Trauma” (5%) and finally, “Thrombin”.

Regarding the amount of blood lost and based on the aforementioned classification of the RCOG, it was recorded that the cases of blood loss of more than 2,500 ml were minimal (5%) and these patients were all managed in intensive care. In contrast, most of the obstetric hemorrhages observed were in the Grade I bleeding range (55%). As a radical treatment, hysterectomy was performed in 226 of the 4,402 who presented with obstetric hemorrhage.

LWATI: A Jour. of Contemp. Res.
ISSN: 1813-222 © Dec. 2024
RESEARCH

Obstetric hemorrhage is one of the most feared complications, due to the sequelae it can trigger; however, if the risk factors that can influence its appearance are detected in time, or if a timely diagnosis is made before the blood loss is so important as to compromise a patient's life, the multidisciplinary team involved could manage the situation in the most optimal way and with the least amount of secondary complications (Román et al., 2019; Romero et al., 2020). However, although it can be prevented and treated, due to the participation of various factors, there is always the risk of maternal death as the outcome. And this was no exception in this survey, since it was recorded that during the period of this study, 0.7% of the patients who presented obstetric hemorrhage died.

Conclusion

At the HMPMPS, 16% of the patients presented obstetric hemorrhage, which places us below the average in Latin America. Uterine atony is the main cause of bleeding both in our patients and worldwide. The incidence of serious bleeding in patients treated at our hospital is low.

References

Borovac Pinheiro, A., Ribeiro, F.M., Pacagnella, R.C. (2021) Risk Factors for Postpartum Hemorrhage and its Severe Forms with Blood Loss Evaluated Objectively – A Prospective Cohort Study. *Revista brasileira de ginecologia e obstetricia : revista da Federacao Brasileira das Sociedades de Ginecologia e Obstetricia*, 43(2), 113-318.

CENETEC. (2021). Prevención y manejo de la hemorragia postparto. *Guía de Práctica Clínica: Evidencias y Recomendaciones*. México. Available at: http://www.cenetecdifusion.com/CMGPC/GPC-SS-103-21/ER.pdf

Combs, C.A., Murphy, E.L., Laros, R.K. Jr. (1991). Factors associated with postpartum hemorrhage with vaginal birth. *Obstetrics and gynecology*, 77(1), 69–76.

Fong Pantoja, L., & Garcés Suarez, M. (2023). Factores de riesgo relacionados con las complicaciones de la hemorragia

obstétrica. *Revista Cubana de Medicina Militar*, 52(4), e02303015.

García-Lavandeira, S., Álvarez-Silvares, E., Rubio-Cid, P., Borrajo-Hernández, E. (2017). Hemorragia posparto secundaria o tardía. *Ginecología y obstetricia de México*, 85(4), 254-266.

Hernández-Morales, M.A., García-de la Torre, J.I. (2016). Factores de riesgo de hemorragia obstétrica. *Ginecología y obstetricia de México*, 84(12), 757-764.

James, A. H., Federspiel, J. J., & Ahmadzia, H. K. (2022). Disparities in obstetric hemorrhage outcomes. *Research and practice in thrombosis and haemostasis*, 6(1), e12656.

Ramírez, M., Jiménez, A., Neri, E., Rodríguez, O., Rojas, G. (2020). Desarterialización en la hemorragia obstétrica: ligadura de hipogástricas, ováricas, Sampson. Seguimiento por angiotomografía computada pélvica. *Revista de Ginecología y Obstetricia de México*, 88(7), 423436.

RCOG. (2011). Antepartum Haemorrhage, Greentop Guideline No. 63. *Royal College of Obstetrics & Gynaecologists*, London. Available at: https://www.rcog.org.uk/guidance/browse-all-guidance/green-top-guidelines/antepartum-haemorrhage-green-top-guideline-no-63/

Rivera, S., Chacón, C., González, A. (2020). Hemorragia posparto primaria: diagnóstico y manejo oportuno. *Revista médica sinergia*, 5(6), 1-14.

Román, J; Oyola, A., Quispe, M. (2019). Factores de riesgo de hemorragia primaria posparto. *Revista Cubana de Medicina General Integral*, 35(1), 112.

Romero, I., Muñoz, D., Benitez, L. (2020). Experiencia familiar frente la muerte materna. *Revista ciencia y cuidado*, 17(2), 4452.

Secretaría de Salud. (2022). Informe Semanal De Notificación Inmediata De Muerte Materna Semana Epidemiológica 52 de 2022. Available at: https://www.gob.mx/cms/uploads/attachment/file/788958/MM_2022_SE52.pdf

Souza Ruas, S. J., Rocha, D. B., Leite, B. O., Amorim, Ítala A. G., Machado, A. P. N., Souza, L. F. de. (2023). Prevalência de hemorragia pós-parto vaginal em um hospital escola. *Peer Review*, 5(22), 171–185.

LWATI: A Jour. of Contemp. Res.
ISSN: 1813-222 © Dec. 2024
RESEARCH

World Health Organization: WHO. (2023a). Mortalidad materna. Available at: https://www.who.int/es/news-room/fact-sheets/detail/maternal-mortality

World Health Organization: WHO. (2023b). WHO issues global plan to tackle leading cause of death in childbirth. Available at: https://who.int/news/item/11-10-2023-who-issues-global-plan-to-tackle-leading-cause-of-death-in-childbirth

Zaragoza Saavedra, J. J. (2020). Hemorragia obstétrica. *Revista Mexicana de Anestesiología*, 39(1), S20-S21.