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CONDUCTS ADOPTED FOR PRE-ECLAMPSIA CASES IN SECONDARY CARE: EVOLUTION OVER THE LAST TWENTY YEARS

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Abstract: Introduction: Pre-eclampsia is a multifactorial disease specific to pregnancy, which can compromise multiple systems. Manifesting itself after the twentieth week of pregnancy, it can significantly increase the chances of premature birth and increase perinatal morbidity and mortality rates, being one of the main causes of maternal mortality. In the last 20 years, several concepts have been updated, making it necessary to carry out a thorough analysis of the main medical approaches adopted throughout this period in secondary care. Methodology: In this review article, works written between the years 2000 and 2023 published by the ``*Revista Brasileira de Ginecologia e Obstetrícia*`` and the magazine Scientific Eletronic Library Online (ScieELO) were analyzed with the aim of identifying changes in the conduct adopted for cases of pre- eclampsia in secondary hospitals.

Results: During the 2000s, pre-eclampsia was seen exclusively as an outpatient condition because hospitalization was not seen as a factor in improving this situation. However, since 2011, hospitalization has been increasingly useful in preventing severe cases of the disease and essential for maintaining maternal and fetal health, demonstrating the relevance of continued secondary care in these cases. Currently, a vigilant approach is adopted depending on maternal-fetal conditions, aiming to avoid extreme premature births, introducing lung maturation therapies and prevention of convulsive episodes, antihypertensive treatment and maternal rest. Furthermore, since 2021 monitoring practices have been implemented that contribute to reducing the rates of complications resulting from prematurity.

Conclusion: In this sense, the changes implemented in the last twenty years in the diagnosis and treatment of pre-eclampsia have played a preponderant role in offering a more comprehensive and protected health approach, where hospitalization has emerged as a vital component in containing more serious forms. of the disease and brought positive results to the affected group.

Keywords: Pre-eclampsia, Secondary care, Medical management.

INTRODUCTION

Pre-eclampsia is a multifactorial disease specific to pregnancy, which can compromise multiple systems. It is clinically manifested by systolic blood pressure greater than or equal to 140 mmHg and diastolic blood pressure greater than or equal to 90 mmHg after 20 weeks of gestational age in normotensive pregnant women, or by increased blood pressure levels in previously hypertensive pregnant women, associated with proteinuria and/or dysfunction of target organs such as renal and hepatic failure, pulmonary edema and visual and cerebral disorders such as headache, scotomas and convulsions. (CAVALLI; COSTA; OLIVEIRA, 2017)

"[...] Hypertensive syndromes are responsible for almost a quarter of maternal deaths in Brazil" (BEZERRA, ANDRADE, 2021). Furthermore, in the last 5 years, approximately 566,500 pregnant women were hospitalized in Brazil due to a certain hypertensive syndrome of pregnancy and among these women, 552 died, showing that these dysfunctions have an intrinsic relationship with maternal morbidity and mortality in the country and need to be studied deep. (TabNet Win32 3.0: SUS Hospital Morbidity - by place of residence - Brazil, 2022)

Despite being multifactorial, the exact etiology of pre-eclampsia is still unknown, and there is great debate about medical management around the world. In this sense, much research has been carried out and the approach has been modified over the last two

decades, with the aim of ensuring greater safety for the pregnant woman and the fetus. Improvements in the diagnostic method, prevention and treatment have been portrayed in several national and international studies. Previously, parameters such as proteinuria and edema were diagnostic criteria for pre-eclampsia, the classification of this pathology was considered mild or severe - even though it was a condition in which changes in the condition could be abrupt and difficult to predict - and there was no consensus among the value for diagnosing high blood pressure during pregnancy nor on the prophylaxis adopted.

Furthermore, pre-eclampsia, in particular, can significantly increase the likelihood of premature birth and increase perinatal morbidity and mortality rates. Within this alarming scenario, in which pre-eclampsia continues to be an important indicator of maternal and perinatal mortality, it is necessary to carry out a thorough analysis of the main medical approaches recommended for this context in secondary care and their evolution over recent years, since the beginning of the 2000s, several concepts have been updated and bodies committed to studying these subjects have been created, such as the Brazilian Network of Studies on Hypertension in Pregnancy (RBEHG), which is " [...] a multidisciplinary network formed by professionals in the health area with a specific interest in the study of hypertensive syndromes of pregnancy that addresses the pre-conception period, pregnancy, postpartum period and its long-term follow-up." (RBEHG: Brazilian Network of Studies on Hypertension in Pregnancy", [n.d.])

METHODOLOGY

Review article with analysis of works written between the years 2000 and 2023 published by the ``*Revista Brasileira de Ginecologia e Obstetrícia*`` and indexed in the Scientific Electronic Library Online (ScieELO) database, with the aim of analyzing changes in the conduct adopted for cases of pre-eclampsia in secondary hospitals. Using the following terms for research: "pre-eclampsia", "protocol", "conduct", "treatment and "prevention", 12 articles were selected at the end, 8 of which were published by the ``*Revista Brasileira de Ginecologia e Obstetrícia*`` and 4 found in the SciELO database.

In the first search, 333 articles were found in the selected databases, but 106 were duplicates. 121 articles were selected to read the titles and abstracts, 101 of which were excluded due to the lack of identification of an explicit relationship with the topic. 20 articles were read completely by the researchers and 12 of these were included in the research.

Articles that related pre-existing diseases with the emergence of pre-eclampsia, that associated pre-eclampsia with other pathologies, that did not focus on conduct and protocols, treatment or prevention of pre-eclampsia and that did not fit into the period were excluded from the selection. analyzed. Articles were selected that addressed the evolution of care in pre-eclampsia, that compared hospitalized care with home care, that presented maternal and perinatal consequences of this condition, that portrayed diagnostic, treatment and prevention mechanisms and that presented indices on pre-eclampsia in present.

RESULTS AND DISCUSSION

During the 2000s, pre-eclampsia was mostly seen as an outpatient condition because, according to previous research, hospitalization did not offer significant improvements in the condition (ALVES, 2001). However, since 2011, hospitalization has been increasingly useful in preventing severe disease and essential for maintaining maternal and fetal health, as the studies reviewed demonstrated a decrease in the number of premature births and the number of maternal deaths during and after childbirth (COSTA, et al. 2022)

Controversies in the very definition of pre-eclampsia directly influenced the change in behavior in these cases. Previously, the term Pregnancy-Specific Hypertensive Diseases (GHD) was used to group pathologies such as pre-eclampsia, HELLP syndrome, super-adjacent pre-eclampsia, chronic arterial hypertension and gestational hypertension, which made specific diagnosis and determination of appropriate treatment difficulty, since each condition has different characteristics. For example: pre-eclampsia, as already mentioned, consists of hypertension that begins after the twentieth week of pregnancy associated with proteinuria, edema, headache or visual symptoms; HELLP syndrome describes the condition of patients with eclampsia who present with hemolysis, elevated levels of liver enzymes, and a decrease in the number of platelets; super-adjacent pre-eclampsia occurs when there is pre-eclampsia associated with pre-existing hypertension during pregnancy; chronic arterial hypertension represents a condition of systemic arterial hypertension existing before pregnancy and gestational hypertension indicates a condition of high blood pressure in previously normotensive pregnant women after the twentieth week of gestation. (CAVALLI; COSTA; OLIVEIRA, 2017)

Since the 1970s, investigations have been carried out into the validity of hospitalization of pregnant women with hypertensive syndromes. This is due to the fact that, given the uncertainty regarding the etiology of these syndromes, the approach to each case can vary considerably according to certain parameters. A survey conducted in 1992, involving 218 pregnant women with gestational ages between 28 and 38 weeks, revealed that hospitalized pregnant women had a lower incidence of severe pre-eclampsia and a lower number of premature births, but no significant differences were found in relation to morbidity. perinatal. Thus, despite the aforementioned indicators, home care was promoted in hypertensive cases considered mild, which led to an increased risk of complications and maternal morbidity. Furthermore, the scarcity of diagnostic and monitoring tools exacerbated difficulties in diagnosis and treatment, making home care even more risky. Therefore, the most adopted approach at this time was childbirth, as it was the definitive treatment for the existing condition, which directly impacted the number of premature births and the need for admission to a neonatal intensive care unit.

From 2011 onwards, the perspective regarding hospitalization of pregnant women with hypertensive syndromes began to change. At that time, research was carried out on a more conservative approach to cases of pre-eclampsia. In this new protocol, for cases in which it is still possible to prevent maternal and perinatal complications (in which there are no complications or fetal suffering), practices are carried out that make it possible to prolong the pregnancy and maintain maternal and fetal well-being. Examples include corticosteroid therapy for lung maturation, anticonvulsant therapy with magnesium sulfate, antihypertensive

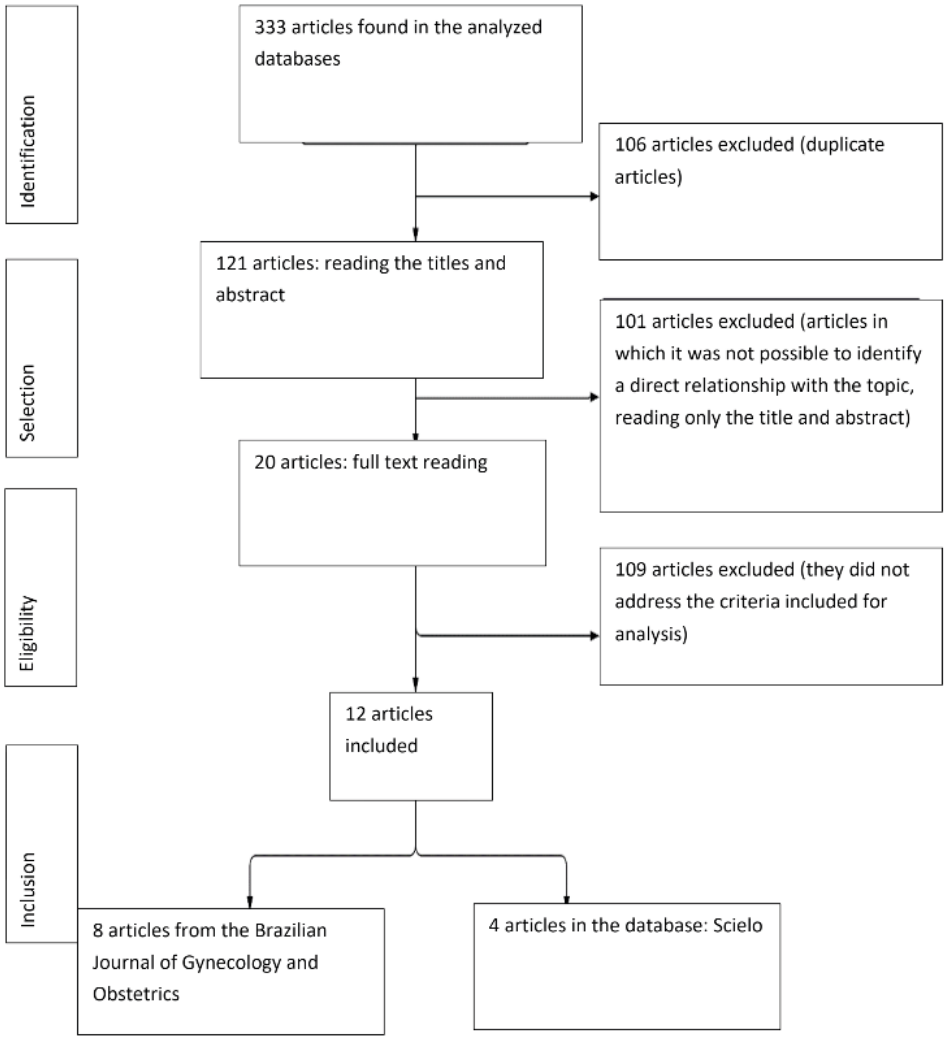

Figure 1: Flowchart showing the results of the search, selection and inclusion of evaluated articles

treatment and maternal rest (NORONHA, 2010). Research carried out between 2008 and 2018 corroborates that conservative management is related to a lower incidence of APGAR scores below 7 in the first 5 minutes, higher birth weight and a lower number of fetal deaths. Furthermore, they directly associate cases of pre-eclampsia and other hypertensive syndromes with an increase in the number of cesarean sections. (RAMOS, 2020)

From 2020 onwards, new practices for monitoring and preventing cases of pre-eclampsia were studied. Procedures such as administration of aspirin in dosages greater than 100 mg between the 11th and 14th week of pregnancy, administration of heparin and calcium supplementation were positively evaluated as prevention tools in patients classified as being at risk for developing pre-eclampsia. Checking parameters such as abrupt weight gain, edema of the hands and face were also adopted as indicators of the emergence of pre-eclampsia. This protocol contributes to reducing the rates of complications resulting from prematurity, shortening the stay in the neonatal unit, relieving respiratory discomfort and higher birth weight, showing positive effects for the fetus.

As a result, transformations made in the

pre-eclampsia diagnostic process also helped to reduce the incidence of underdiagnosis, encouraging early screening of this condition and enabling more appropriate management (COSTA, 2022). Such procedures are exemplified through the use of Doppler ultrasound to evaluate distortions in the blood flow pattern and velocity in the uterine, middle cerebral and umbilical arteries; tests with biomarkers such as PAPP-A (plasma protein A), mainly in conjunction with Doppler ultrasound, PLGF (glycolyzed dimeric glycoprotein), sFlt-1/PIGF ratio as an indication of placental disorders, analysis of renal impairment (creatinine greater than 1.1mg/dl), liver dysfunction (increase in transaminases by 2 times the upper normal limit and epigastric pain) and thrombocytopenia (platelet count less than 100,000/mm^3).

Furthermore, prevention of trauma due to falls, maintenance of airway patency, oxygen support and prevention of aspiration in cases of vomiting are other necessary precautions to guide the management of pre-eclampsia cases. In this sense, the changes implemented within the scope of diagnosis and treatment of pre-eclampsia played a preponderant role in offering a more comprehensive and protected health approach. This progress not only ensures an increase in the well-being of the mother and fetus, but also results in a decrease in maternal-fetal morbidity and mortality rates.

CONCLUSION

Changes that have occurred over the last twenty years have modified medical approaches to this condition and have brought positive results for the affected group. The previous view, which limited pre-eclampsia to an outpatient setting, gave way to a more comprehensive and vigilant understanding, where hospitalization emerged as a vital component in containing more serious forms of the disease.

The current approach, strategically adapted to maternal-fetal particularities, adopted a diligent stance that combines the application of multiple monitoring, therapeutic and diagnostic resources and rest. This approach has proven effective in reducing maternal and perinatal complications associated with prematurity. In short, this modification not only proved to be fundamental in preserving maternal-fetal health, but also acted to reduce morbidity and mortality rates, perpetuating itself as a narrative of progress in reproductive health.

According to the 2023 protocol on pre-eclampsia of the Brazilian Network of Studies on Hypertension in Pregnancy (RBEHG) (p. 38-40, 2023), in cases without signs of severity, expectant management is recommended until the thirty-seventh week of pregnancy. pregnancy with blood pressure control, monitoring of signs and symptoms of imminent eclampsia and weekly reassessment of clinical changes and fetal well-being and growth. In cases with signs of severity, an individual assessment of each case is necessary to determine the best treatment. In this scenario, pregnancy resolution is indicated, regardless of gestational age, when there are the following clinical deteriorations: HELLP syndrome, imminent eclampsia refractory to treatment, placental abruption, hypertension refractory to treatment with three antihypertensive drugs, pulmonary edema, cardiac impairment, progressive laboratory changes, renal failure, liver hematoma or rupture and changes in vital vitality.

As prevention measures Brazilian Network of Studies on Hypertension in Pregnancy (RBEHG) (p. 22-24 2023) suggests: physical activity of at least 140 minutes of moderate exercise weekly, intake of acetylsalicylic acid (AAS) for pregnant women at risk of

manifesting pre-eclampsia and calcium supplementation through diet. As clinical management for pregnant women already diagnosed, the protocol cites: normal diet without restrictions, maternal rest, laboratory monitoring and hospital monitoring, use of antihypertensives and supplementation with magnesium sulfate. (p. 25-38, 2023)

In the current scenario, it is essential to delve deeper into the topic and its advances so that professionals can guarantee the well-being of the pregnant woman-fetus binomial during pregnancy, since there is still conflicting research on the relevance of each conduct adopted, due to the lack of knowledge of its etiology and the specificity of each case.

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