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INTEGRATIVE REVIEW ARTICLE

PREVENTIVE MEASURES OF HYPERTENSIVE SYNDROMES OF PREGNANCY IN PRIMARY CARE

MEDIDAS PREVENTIVAS DAS SÍNDROMES HIPERTENSIVAS DA GRAVIDEZ NA ATENÇÃO PRIMÁRIA

MEDIDAS PREVENTIVAS DE LOS SÍNDROMES HIPERTENSIVOS DEL EMBARAZO EN LA ATENCIÓN PRIMARIA

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ABSTRACT

Objective: to identify the preventive measures of the Hypertensive Syndromes of Pregnancy in Primary Care. ***Method:*** integrative review, without temporal delimitation, carried out in five databases, in the English, Spanish and Portuguese languages, in June 2017, obtaining 75 articles selected by means of an already validated instrument. ***Results:*** the categories "Medication treatment / supplementation" were identified, highlighting the possibility of complications when started early; "Lifestyle", through the encouragement of healthy practices that imply the improvement of the health of the binomial and "Prenatal care", emphasizing the need for more actions aimed at the attention to pregnant women at high risk. ***Conclusion:*** the drug treatment / supplementation evidences the necessity of the extension of the professional knowledge for the use of this preventive measure in a timely manner. ***Descriptors*:** Pregnancy Induced Hypertension; Pregnancy complications; Prevention and control; Antenatal Care; Primary Healthcare; Review.

RESUMO

Objetivo*:** identificar as medidas preventivas das Síndromes Hipertensivas da Gravidez na Atenção Primária. ***Método*:** revisão integrativa, sem delimitação temporal, realizada em cinco bases de dados, nos idiomas inglês, espanhol e português, no mês de junho de 2017, obtendo 75 artigos selecionados por meio de instrumento já validado. ***Resultados*:** foram identificadas as categorias "Tratamento medicamentoso/suplementação", destacando a possibilidade de complicações quando iniciado precocemente; "Estilo de vida", mediante o incentivo de práticas saudáveis que implicam a melhora da saúde do binômio e "Assistência pré-natal", salientando a necessidade de mais ações direcionadas à atenção às gestantes de alto risco. ***Conclusão: o tratamento medicamentoso/suplementação evidencia a necessidade da ampliação do conhecimento profissional para a utilização dessa medida preventiva em tempo hábil. ***Descritores*:** Hipertensão induzida pela gravidez; Complicações na gravidez; Prevenção de Doenças; Cuidado pré-natal; Atenção Primária à Saúde; Revisão.

RESUMEN

Objetivo: identificar las medidas preventivas de los Síndromes Hipertensivos del Embarazo en la Atención Primaria. ***Método:*** revisión integradora, sin delimitación temporal, que tuvo lugar en cinco bases de datos, en inglés, español y portugués, en junio de 2017, la obtención de 75 artículos seleccionados a través del instrumento ya validado. ***Resultados:*** se identificaron las categorías: "Tratamiento medicamentoso / suplementación", destacando la posibilidad de complicaciones cuando iniciados precozmente; "Estilo de vida", mediante el incentivo de prácticas saludables que implican la mejora de la salud del binomio; y "Asistencia prenatal", destacando la necesidad de más acciones dirigidas a la atención a las gestantes de alto riesgo. ***Conclusión:*** el tratamiento medicamentoso / suplementario evidencia la necesidad de la ampliación del conocimiento profesional para la utilizar esa medida preventiva en tiempo hábil. ***Descriptores*:** Hipertensión inducida en el embarazo; Complicaciones del Embarazo; Prevención de Enfermedades; Atención Prenatal; Atención Primaria de Salud; Revisión.

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INTRODUCTION

Pregnancy-related hypertension is a common condition, with an incidence ranging from 5% to 10%.[1] The diagnosis of hypertension in pregnancy is performed when blood pressure levels are 140/90 mmHg or greater and can be classified as : Pre-eclampsia, when hypertension arises after the 20th week of pregnancy and is associated with proteinuria (≥ 0.3g protein in 24-hour urine or ≥ 2 crosses in urine sample); Chronic hypertension, identified before pregnancy or before the 20th week and Pre-eclampsia overlapped with chronic hypertension, which occurs when the patient has previous hypertension and proteinuria after the 20th week of pregnancy.[1-2]

The Hypertensive Syndromes of Pregnancy have no cure except for termination of pregnancy, and one of the most serious conditions is when it progresses to HELLP Syndrome (Haemolysis,Elevated Liver enzyme activity and Low Platelets) or DIC (Disseminated Intravascular Coagulation).

Primary Health Care (PHC) represents the first level of care and aims to accommodate users by prioritizing health promotion, protection and recovery actions in an integral and continuous way.[1] It allows health professionals to approach families for a better compression of the health-disease process and intervention needs that go beyond curative practices.[3-4]

Thus, PSA plays a major role in preventing complications of GHS, once the risk factors such as obesity, chronic hypertension, diabetes, inadequate diet and sedentary lifestyle are still detectable conditions in preconception.[5]

A study performed with Brazilian pregnant women showed that the prevalence of preeclampsia increased with age (OR 1.55, 95% CI 1.08, 2.23), pre-gestational BMI (OR 1.83, 95% CI , Weight gain in early pregnancy (OR 1.27, CI 95% 1.06, 1.52), and that the variable “excessive weight gain during pregnancy” remained significantly associated with the prevalence of disease.[6]

Information about Brazil is underestimated and varies according to the regions of the country.[7] A national study estimates that the prevalence of eclampsia is 0.2% in more developed areas, with a maternal mortality rate of 0.8%, while , in the less favored regions this prevalence increases to 8.1%, with a maternal mortality rate of 22.0%.[8] Thus, the increase in mortality due to elevated blood pressure during pregnancy is the main cause of mortality maternal in Brazil.[1-6]

Given the relevance of the theme and the character of increasing morbidity and mortality in Brazil, this integrative literature review will contribute to the knowledge related to the preventive measures of GHS, subsidizing practice in Nursing.

OBJECTIVE

- To identify the preventive measures of the Hypertensive Syndromes of Pregnancy in Primary Care.

METHOD

Initial survey in the literature evidenced a gap regarding revisions on the theme of preventive measures of GHS in Primary Care. This type of study aims to critically evaluate and synthesize the available evidence about the research topic, constituting a comprehensive method of research.9-10 For the searches, the Medical Literature databases (LILACS), Scientific Electronic Library Online (SciELO), SCOPUS and Cumulative Index to Nursing and Allied Health Literature (CINAHL) were chosen due to wide access in the health area.

For the data collection, the following six steps were considered: integration of the theme and selection of the research guiding question; establishment of criteria for inclusion and exclusion of studies; definition of the phenomena related to the preventive measures of GHS to be extracted from the original articles; evaluation of selected articles in the integrative review; interpretation of results; presentation of the knowledge evidenced by the integrative review.[9-10]

The formulation of the guiding question of this study was defined from the following question: What are the preventive measures of the Hypertensive Syndromes of Pregnancy in Primary Care?

Inclusion criteria were publications in the Portuguese, English or Spanish languages and that had as object of study the prevention of the complications of GHS in Primary Care. The exclusion criteria were studies not coming from primary sources such as reviews, editorials, opinions and comments. Due to the relevance of the topic, we opted for the timeless clipping of the publications and broad descriptors registered in the Descriptors in Health Sciences for the search conducted in June 2017, in all bases, by means of the following combination of descriptors: hypertension AND pregnancy associated with the term qualification prevention. The articles included in the review that were not initially available in the databases were obtained in

the full text format on the Coordination of Improvement of Higher Education Personnel Portal (CAPES).

Figure 1 shows the procedure used in the search, exclusion and selection of studies found, with the support of the PRISMA checklist, as a tool that helps to improve health research.[11]

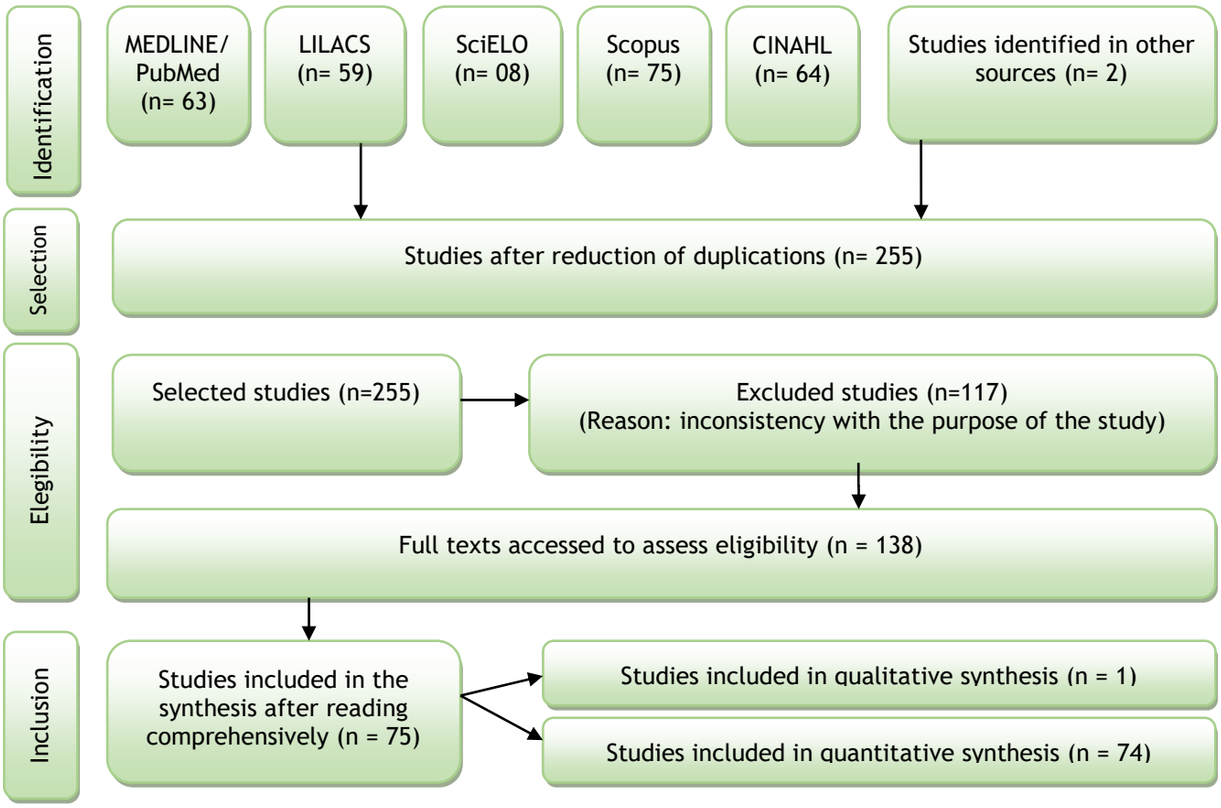

Figure 1. Flowchart of identification, selection and exclusion of the studies for the Integrative Review. Curitiba (PR), Brazil, 2017.

The initial identification comprised a total sample of 271 studies. After the reduction of the duplications, the articles were selected, by means of the title and abstract, and 138 studies were read in their entirety. The analysis comprised 75 articles that included the objective, the guiding question and the criteria and inclusion and exclusion (Figure 1).

The organization of the data was based on the adaptation of a validated instrument.[12] Subsequently, a double evaluation of the information collected regarding the relevance of the study objectives was carried out and, through reading and critical analysis of the data, three categories were compiled.

Regarding the evidence from the studies, these were classified, considering the hierarchy of evidence for intervention studies,[13] in: Level I - systematic review or meta-analysis; Level II - controlled and randomized studies; Level III - controlled studies without randomization; Level IV - case-control or cohort studies; Level V - systematic review of qualitative or descriptive studies; Level VI - qualitative or descriptive studies and Level VII - opinions or consensuses. By means of the inclusion of only original studies, only articles with levels of evidence II, III, IV and VI.

RESULTS

The increase in research on the subject was evident over the years, with a significant increase from the year 2007. This upward trend was observed in the 19 countries where the publications were distributed, although in North America and Europe they concentrated more than 50% of the productions. Regions of South America and the Caribbean had a similar distribution, with slightly more than a fifth of the publications, whereas, with less presentation, countries of Oceania (9.21%), Asia (7.90%) and Africa (6.57 %) were representative in the last six years, according to table 1.

The predominant language of the publications was English (80.26%), with a rise in that language, as well as in Spanish, while in the Portuguese language a decrease was evidenced throughout the period. Regarding the methodology of the studies, there was a predominance of quantitative methodologies (98.68%), with only one qualitative study (1.32%).

Table 1. Characteristics of studies according to quinquennia. Curitiba (PR), Brazil, 2017.

Variables	Quinquennials				
	1992-1996	1997-2001	2002-2006	2007-2011	2012-2016
	n (%)	n (%)	n (%)	n (%)	n (%)
Publications (n=75)	4 (5.33)	8 (10.66)	10 (13.33)	23 (30.66)	30 (40.00)
Regions of the world					
North America (n= 24)	2 (8.33)	3 (12.50)	1 (4.17)	9 (37.50)	9 (37.50)
Europe (n=17)	1 (5.88)	4 (23.53)	4 (23.53)	4 (23.53)	4 (23.53)
South America and Caribean (n=16)	1 (6.25)	1 (6.25)	3 (18.75)	6 (37.50)	5 (31.25)
Oceania (n=7)	-	-	1 (14.29)	4 (57.14)	2 (28.57)
Asia (n=6)	-	-	-	-	6 (100.00)
Africa (n=5)	-	-	1 (20.00)	-	4 (80.00)
Language of publication					
English (n= 60)	3 (5.00)	6 (10.00)	9 (15.00)	17 (28.34)	25 (41.66)
Spanish (n= 8)	1 (12.50)	1 (12.50)	1 (12.50)	2 (25.00)	3 (37.50)
Portuguese (n=7)	-	1 (14.29)	-	4 (57.14)	2 (28.57)

After reading the studies, three categories were listed: drug treatment / supplementation (44%), lifestyle (33.33%) and prenatal care (21.33%), as presented in table 2, with respective variables studied after the confrontation and the summary of the works.

Table 2. Distribution of categories according to variable evidenced by the studies. Curitiba (PR), Brazil, 2017.

Category/variable	Quinquennials				
	1992-1996	1997-2001	2002-2006	2007-2011	2012-2016
	n (%)	n (%)	n (%)	n (%)	n (%)
Drug Treatment / Supplementation (n=34)					
Acetylsalicylic acid[14-29]	3 (18.75)	5 (31.25)	3 (18.75)	-	5 (31.25)
Calcium[30-34]	-	1 (20.00)	2 (40.00)	1 (20.00)	1(20.00)
Calcium and Folic acid [35]	-	-	-	1 (100.0)	-
Folic acid [36-37]	-	-	-	-	2 (100.0)
Vitamin C [38]	-	-	-	-	1(100.0)
Vitamin C and E [39-44]	-	-	2 (33.33)	4 (66.66)	-
Vitamin D [45]	-	-	-	-	1(100.0)
Vitamin D and palm oil [46]	-	1 (100.0)	-	-	-
Fish oil[47]					
Lifestyle (n=25)					
Diet[48-52]	1 (20.00)	-	-	2 (40.00)	2 (40.00)
Exercise[53-58]	-	-	-	2 (33.33)	4 (66.66)
Behavior change [59-60]	-	-	1 (50.00)	-	1 (50.00)
Obesity[61-67]	-	-	-	2 (28.58)	5 (71.42)
Smoking[68-72]	-	-	1 (20.00)	4 (80.00)	-
Prenatal care (n=16)					
Morbidity Assessment [73-81]	-	-	-	5 (55.55)	4 (44.45)
Prenatal quality[78-81]	-	1 (20.00)	1 (20.00)	1 (20.00)	1 (20.00)
Health Education[86-88]	-	-	-	1 (33.33)	2 (66.66)

DISCUSSION

♦ Drug Treatment / Supplementation

Subjects on drug treatment / supplementation were described in almost half of the studies (44%) as a preventive measure in GHS. The recommended drug of choice was Acetylsalicylic Acid (SSA).[14-29] The action of calcium was evaluated in five (20%) studies, 30-34 as well as the calcium variation with folic acid.[35]

Vitamin supplementation emerged unobtrusively in the course of the publications and was described in nine of the studies,[38-46] mainly, covering supplementation with vitamin C and E[39-44] in combination.

Supplementation with antioxidants showed that there was no contribution of the use in reducing the incidence of preeclampsia or occurrence of maternal or neonatal adverse outcomes[38-46] both in the individual use of vitamins, as C[38] and D,[45] as in association of vitamin E with oil of palm[46] and the isolated use of fish oil,[47] both of which did not show any beneficial effects during prenatal care.

The use of low-dose SSAs has been shown to contribute effectively to blood pressure control and to significantly reduce the incidence of hypertensive complications[15,26] and should be started before the 20th gestational week,[1,17,15-9,23-4,27] since its use, after the third quarter, did not present favorable effects.[28]

In this sense, quality prenatal care allows the early identification and follow-up of changes in pregnant women's blood pressure levels and allows for the control of the condition as in cases of severe hypertension, in which the treatment initiated with

antihypertensive drugs allows the reach best results during pregnancy.[1]

However, despite the positive effects of drug treatment, there were studies that showed that the use of SSA had no impact on the reduction of pregnant women's blood pressure levels,[18,22] with no effect on the rate of preterm birth,[16] being contraindicated in pregnant women without hypertension,[25] nor as routine prophylactic use during pre-conception, incurring an increased risk of hemorrhagic complications.[14]

Antiplatelet agents are among the most promising drugs for the prevention of preeclampsia.[15] When combined with calcium (2 g), there was a reduction in the rate of pre-eclampsia overlapped by 28.6% and by 80.8% in the rate of fetal growth restriction in women with chronic hypertension and abnormal Doppler in the second trimester, [16] corroborating the World Health Organization (WHO) guidelines recommending a low dose (75 mg / day) of SSA before the first 20 weeks of pregnancy.[2]

On the other hand, folic acid intake (400 ug) 37 and vitamin C and E supplementation during pregnancy were not effective in preventing the occurrence of gestational hypertension and preeclampsia,[38-46] as well as other complications such as the risk of intrauterine growth restriction.[42]

Calcium supplementation, before the 20th week of pregnancy, produced a significant decrease in the incidence of preeclampsia,[30-1] which is in line with WHO guidelines recommending calcium supplementation in regions where dietary calcium intake is low. [2] Calcium supplementation had positive effects in adolescents[32] and in the blood pressure of the children of pregnant women with hypertension[30] reducing the severity of GHS and maternal morbidity and mortality,[34] but the same effects were not observed in nulliparous women.[33]

Despite available evidence, one of the studies has shown that neither calcium during pregnancy nor folic acid during the periconceptional period are routinely prescribed.[35]

When assessing the proportion of patients undergoing prenatal care who received the calcium supplementation prescription, this indication was observed for only 10.40% of the pregnant women. Similarly, only 43.20% were instructed to consume more calcium-rich foods.[35]

However, in order for the use of medications to prevent complications and to develop GHSs to be effective, it is necessary to know the doubts, habits and culture of pregnant women, so that the medicines are used regularly, and with the knowledge of possible side effects, in addition to making it easier for women to access them.

♦ **Lifestyle**

In studies that comprised this category,[25] (33.33%), there were studies related to diet (20.83%), [48-52] to physical exercise practice (25.00%),[53-8] to change of behavior (8.33%),[59-60] to obesity during and before the pregnancy period (29.16%)[61-7] and to smoking (16.66%).

Obesity and excessive weight gain during pregnancy increase the risk of obstetric and neonatal complications, particularly hypertension and postpartum haemorrhage. Thus, preventive and effective strategies are necessary[61,67] such as encouraging women of childbearing age to consume a healthy diet.[52]

The prevention of pregnancy-induced hypertension can be difficult only when it is focused on reducing weight gain, and maternal education[62] is also necessary through the elaboration of campaigns.[64]

Intensive and personalized weight management intervention may be an effective strategy for the prevention of hypertensive disorders during pregnancy.[63] However, a simple self-weighing intervention and dietary advice did not prevent obstetric complications for women with a BMI of 25 or higher.[66]

Pre-pregnancy obesity prevention efforts should include children, adolescents, and young women, reducing future maternal complications related to obesity.[65]

Encouraging pregnant women to behave in a healthy manner can provide an early diagnosis of preeclampsia.[6] Weight reduction, good management of chronic hypertension, and reduction of stressful conditions during pregnancy may be steps in the primary prevention of this disorder.[60]

According to WHO, lifestyle is the set of customs that are influenced, modified, encouraged or inhibited.[2] Thus, using educational campaigns, sharing positive experiences, potentializing skills and increasing women's satisfaction are strategies to encourage them in the search of a healthy lifestyle.

Lifestyle modification produced lower gestational weight gain, by improving maternal and infant health, 5[1] by reducing sodium, fat, protein and calcium intake,[49] and it is evident that the promotion of a healthy diet represents a strategy with potential for prevention of GHS.[53]

Additional studies should be performed with food to confirm its protective effects in

the prevention of GHS, such as ingestion of fatty acids, milk, magnesium and folate, [48] the intake of chocolate[50] and the Mediterranean style diet.[52]

Physical activity is also recommended for better health outcomes among pregnant women[53] and for the prevention of the development of chronic diseases such as obesity, hypertension and diabetes.[54]

The prevalence of physical activity during pregnancy is extremely low and it is evident that most women decrease or even withdraw from exercise during the gestational period.[55] Women who practice physical activity during pregnancy tend to have a lower risk of preterm delivery[55] and pre-eclampsia.[56]

Performing activities, regardless of style and alternative therapies, also demonstrates their positive effects during pregnancy. It has been shown that regular yoga practice can reduce the frequency of hypertensive disorders in pregnancy, gestational diabetes, intrauterine growth restriction and possibly improve fetal outcomes.[57]

The proximity of the place of residence to the green spaces was also associated with lower blood pressure values among pregnant women, since there is an increase in physical and recreational activity, decreasing stress and obesity.[58]

Diet or physical exercise or both, during pregnancy, stand out as high-quality evidence with maternal and infant benefits, such as a lower risk of cesarean section, fetal macrosomia and neonatal respiratory morbidity, as well as reduction of maternal hypertension.[68]

On the other hand, harmful habits, such as smoking, represent an independent risk factor for preeclampsia overlapping with chronic hypertension, emphasizing the high prevalence of restriction of fetal growth,[69] making it necessary strategies from the pre-conception to prevent smoking during pregnancy.[70] However, it is evident that there was no apparent association between smoking and the development of preeclampsia, including in young women.[70-2]

Thus, it is necessary to implement strategies in order to sensitize pregnant women to adopt attitudes and behaviors for a healthy life, involving lifestyle changes and beliefs, which requires nurses to work in a more dynamic, creative way and interactive with the multiprofessional team aligned to the needs of the population assigned to the service.

♦ **Prenatal care**

Prenatal care was observed in 16 (21.33%) studies, showing less attention to the professional aspect of PHC, promotion and prevention of health problems for the population, as recommended by the ministerial guidelines.[1] In this category, related variables were investigated to the evaluation of morbidity in nine (52.94%) studies;[73-81] to the quality of prenatal care in four (25%) publications[82-5] and to health education in three (18.75%) studies.[86-8] According to the previous category, only since the year 2000 have there been publications related to this subject.

During prenatal care, interventions should be adequate for the reduction of complications of maternal deaths, as well as the commitment of health professionals to improve prenatal care.[1-2] It is the task of health teams to improve practices directed to the pregnant woman, with attribution of the gestational risk to each consultation, aiming to contribute to the continuity of the reduction of maternal and infant mortality.[73,77-8,84] In this sense, adequate care is essential from the beginning of pregnancy, when the implementation of specific interventions can reduce maternal and perinatal mortality.[82]

The complications of hypertension are responsible for the high rates of maternal death related to pregnancy and the adequate follow-up of pregnant women during and after delivery is an important measure to better control this condition, making it essential to reduce disorders in pregnancy.[75-76]

In addition to the importance of prenatal care, health education actions for women may contribute to the adaptation of inappropriate habits and lifestyles, as it may increase the level of recognition of signs and symptoms of pressure changes[84,86] and benefit in the early diagnosis, preventing complications related to the disease.[74,79,81,83-4]

However, studies are needed in order to improve prenatal care,[82] in addition to the screening of complications, establishing a rescue system for severely ill women.[80]

Consideration should be given to the participation of professionals from different health areas to contribute to the improvement of health promotion and prevention of complications,[85] to insist on the identification of risk factors that trigger GHS and the self-care of these patients, as well as research on pharmacological management.[87]

Care in the diagnosis and appropriate management of GHSs tend to receive greater attention from health professionals only when pregnant women already have an unfavorable

outcome in previous pregnancy[2], evidencing a lack of quality in the development of the role of PHC.

In the evaluation of the management of arterial hypertension in pregnant women, it is evident that, in about three quarters of cases, prenatal care was inadequate. In more than half of these cases, 58%, due to the irresponsibility of the healthcare professional in charge of the treatment; 22% due to health network problems and only 8% due to situations arising from the pregnant woman's own care.[2,4]

In addition to professional care, it is necessary to encourage the pregnant woman regarding self-care, and this should be informed and clarified about the risks that the disease can cause. Since there is a tendency to take greater care with pregnant women who monitor their blood pressure, 88 take medication correctly and attend consultations with specialists.[3]

The preparation of women to avoid complications during pregnancy is essential for successful management of GHS, especially among pregnant women with chronic hypertension.[75] The lack of food counseling, considered a fundamental recommendation to complement medication / supplementation, is almost always 2.4 or is performed in a standardized way, with a hyposodic feeding indication. According to WHO guidelines, it is not recommended the restriction of food salt, but the normosodic diet monitored through the performance of a multiprofessional team.[3]

There is a need to improve the quality of prenatal care, with a focus on the management of GHS[3] and early use of medications,[4] as well as stimulating the participation of pregnant women in improving habits and customs for the incorporation of lifestyle improvements.[5-6]

Drug treatment / supplementation was the most frequent theme among the studies demonstrating the concern to produce knowledge to guide the teaching of important skills in the control of GHS. On the other hand, a gap was identified in researches that demonstrated the importance of prenatal care and lifestyle in the prevention of GHS complications in PHC, indispensable elements for the control of blood pressure,[36,49,51] since, regardless of the therapeutic choice of medication / supplementation, the lifestyle of the pregnant women and the guidelines made by the health professionals during prenatal care are decisive in avoiding complications.[74, 78,81,83-4]

The challenges for future research are in developing and expanding knowledge by combining the categories found in a way that enables the implementation of comprehensive care.

CONCLUSION

The increasing production regarding the preventive measures of the SGH is highlighted, using quantitative methodologies, which prioritize the use of medications for the prevention of complications of hypertension during pregnancy.

There is a production gap that shows interventions in PHC soon after the diagnosis of the disease. As limitations of the research, it is considered impossible to homogenize study designs for comparative purposes of their results.

Mapping the studies that approach the knowledge produced on the preventive measures of GHS in PHC allowed to know the needs, needs and challenges that researchers and health professionals face in this area.

Nurses are the first professionals to have contact with pregnant women in PHC. Therefore, it is essential that Nursing care identifies, early on, the signs of GHS complications with the standardization of care, based on instruments that guide the essential actions, respecting the individuality of each pregnant woman, not only in the biological aspect of the disease, but that contemplates the pregnant woman in her singularity.

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