Preeclampsia: Reflections on How to Counsel About Preventing Recurrence

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Abstract

Preeclampsia is one of the most challenging diseases of pregnancy, with unclear etiology, no specific marker for prediction, and no precise treatment besides delivery of the placenta. Many risk factors have been identified, and diagnostic and management tools have improved in recent years. However, this disease remains one of the leading causes of maternal morbidity and mortality worldwide, especially in under-resourced settings. A history of previous preeclampsia is a known risk factor for a new event in a future pregnancy, with recurrence rates varying from less than 10% to 65%, depending on the population or methodology considered. A recent review that performed an individual participant data meta-analysis on the recurrence of hypertensive disorders of pregnancy in over 99 000 women showed an overall recurrence rate of 20.7%; when specifically considering preeclampsia, it was 13.8%, with milder disease upon recurrence. Prevention of recurrent preeclampsia has been attempted by changes in lifestyle, dietary supplementation, antihypertensive drugs, antithrombotic agents, and others, with much uncertainty about benefit. It is always challenging to treat and counsel a woman with a previous history of preeclampsia; this review will be based on hypothetical clinical cases, using common scenarios in obstetrical practice to consider the available evidence on how to counsel each woman during pre-conception and prenatal consultations.

Résumé

La prééclampsie constitue l'une des complications de la grossesse les plus difficiles à prendre en charge, compte tenu de son étiologie floue, de l'absence de marqueur spécifique permettant d'en prédire la manifestation et de l'absence de traitement précis (outre la délivrance du placenta). De nombreux facteurs de risque ont été identifiés et les outils de diagnostic et de prise en charge ont connu une amélioration au cours des dernières années. Quoi qu'il en soit, cette complication demeure l'une des principales causes de morbidité et de mortalité maternelles à l'échelle mondiale, particulièrement au sein des milieux ne disposant que de faibles ressources. La présence d'antécédents de prééclampsie constitue un facteur de risque connu pour ce qui est de la survenue d'un nouvel événement dans le cadre d'une future grossesse, les taux de récurrence variant de moins de 10 % à 65 % (selon la population ou la méthodologie envisagée). Une récente méta-analyse de données individuelles portant sur la récurrence des troubles hypertensifs de la grossesse chez plus de 99 000 femmes a indiqué un taux global de récurrence de 20,7 %; lorsque l'on s'attardait plus particulièrement à la prééclampsie, ce taux passait à 13,8 %, une complication de moindre gravité étant constatée au moment de la récurrence. Des tentatives de prévenir la récurrence de la prééclampsie ont fait appel à des modifications du mode de vie, à une supplémentation alimentaire et à l'utilisation d'antihypertenseurs, d'antithrombotiques et d'autres agents, le tout étant marqué par une grande incertitude quant à l'efficacité de telles mesures. Il est toujours difficile de traiter et de conseiller une femme présentant des antécédents de prééclampsie; cette analyse se fonde sur des cas cliniques hypothétiques, en utilisant des scénarios courants de la pratique obstétricale pour soupeser les données disponibles quant à la façon de conseiller les patientes dans le cadre des consultations préconceptionnelles et prénatales.

Key Words: Preeclampsia, pregnancy, maternal morbidity, recurrence

Competing Interests: None declared.

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INTRODUCTION

Preeclampsia is one of the most challenging diseases of pregnancy, with unclear etiology, no specific marker for prediction, and no precise treatment besides delivery. Many risk factors have been identified, and diagnostic and management tools have improved over the years. However, preeclampsia is still one of the leading causes of maternal morbidity and mortality worldwide, especially in under-resourced settings.[1–6]

The definition of preeclampsia was recently revised by the American College of Obstetricians and Gynecologists[7] as the new onset of hypertension developing after 20 weeks of pregnancy with coexistence of one or more of the following: proteinuria, other maternal organ dysfunction (renal insufficiency, liver involvement, neurological complications, or hematological complications) and/or uteroplacental impairment reflected by fetal growth restriction.

Preeclampsia is a syndrome with a multisystemic nature, and there are different subtypes of the disease with significant differences on their clinical presentation.[8,9] The most recognized subtypes are early- and late-onset preeclampsia, and data from epidemiological studies have shown that early onset disease (before 34 weeks), although representing only 10% of the total number of preeclampsia cases, is associated with a more severe clinical presentation than late-onset disease, an increased risk of small for gestational age fetus, an increased risk of later cardiovascular disease, and an increased risk of recurrent preeclampsia.[10,11]

There are acute and long-term consequences for the mother and the offspring,[10] including increased risk of chronic hypertension, cardiovascular disease, stroke, and metabolic syndrome for the mother,[11–13] and complications of prematurity for the neonate, along with increased risk of hypertension, diabetes, and neurological impairment later in their lives.[14,15] Psychological consequences from experiencing preeclampsia, especially in severe cases, also have been reported for the woman and her family.[16]

Although a history of previous preeclampsia is a known risk factor for recurrence in a future pregnancy,[17] understanding the results from relevant studies is difficult due to many confounding variables in the patient selection and methodology used, which lead to rates of recurrence varying from < 10% to 65%. A recent review that performed an individual participant data meta-analysis on the recurrence of hypertensive disorders of pregnancy in over 99 000 women showed an overall recurrence rate of 20.7% (13.8% specifically for preeclampsia), with milder disease upon recurrence.[18] There have been numerous studies of how to attempt preventing recurrence of preeclampsia; proposed methods have included changes in lifestyle, dietary supplementations, antihypertensive drugs, antithrombotic agents, and others,[2,17] with many remaining gaps in knowledge about their benefit depending on different or combined potential risk factors. For example, it is always challenging to match a real patient, with their specific history, background, and clinical findings, to a population in a randomized trial. This review will be based on hypothetical clinical cases, with common daily situations in obstetrical practice, in an attempt to use the currently available evidence for counselling in each case (Figure).

ABBREVIATIONS

aPL	antiphospholipid antibodies
APS	antiphospholipid syndrome
SLE	systemic lupus erythematosus

CLINICAL SCENARIOS

Case 1. Pre-conception Consultation

Patient's questions: Can I have a normal pregnancy? Will I have preeclampsia again? What can I do to prevent it?

Clinical case: A 33-year-old woman, obese (weight: 90 kg, height 150 cm, BMI 40 kg/m^2), presents with a history of chronic hypertension since her last pregnancy two years ago, which was complicated by severe preeclampsia diagnosed at 37 weeks' gestation, with imminent eclampsia (headache, visual changes, and epigastric pain). At that time, she was referred to a tertiary maternity hospital, admitted to the intensive care unit, treated with magnesium sulphate, and stabilized. Labour was induced, leading to vaginal delivery of a small for gestational age but healthy baby. Postpartum, the patient lost contact with her primary care physician and discontinued antihypertensive medication on her own a few months before this consultation.

Discussion on how to counsel: This is a unique opportunity to have an impact on this woman's future pregnancy and life. She presents with risk factors not only for another episode of preeclampsia (because of her past history and current medical condition) but also for increased risk of future cardiovascular disease, diabetes, and metabolic syndrome.[13,15] Since she came for a pre-conception consultation, she is likely to understand a few of those risks and might be motivated to make changes in her lifestyle to address them.

With that in mind, we should start our counselling by emphasizing how important it is for her to seek medical support and to plan a pregnancy, and she should be congratulated on this initiative. The next step is to understand the severity of her medical conditions and to perform a detailed evaluation, ideally in co-management with the internal medicine team, to exclude possible secondary causes of hypertension (which are rare, but need to be considered) and to investigate evidence of potential "target organ" damage. For example, there is a significant difference in the risk of preeclampsia superimposed on mild chronic hypertension and on severe pre-pregnancy hypertension,[19–21] and there is also increased risk in preeclampsia associated with diabetes. A detailed medical history (including family history) could point towards investigating other diseases, such as autoimmune diseases or thrombophilia, which can correlate with adverse maternal outcomes and severe preeclampsia and have specific treatment and prophylaxis.

Considering that this is a case of mild chronic hypertension, without other complications, this woman needs to understand that recommending lifestyle modification is