

EXPECTANT MANAGEMENT ON PRETERM PREGNANCY WITH PREECLAMPSIA: A SCOPING REVIEW

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Abstract

Preeclampsia complicates 5-8% of all pregnancies and is responsible for 100 maternal deaths and 400 perinatal deaths every day globally. In the worldwide, preeclampsia and eclampsia are considered as the factors for approximately 14% of maternal deaths and prematurity, in the 30-34 week gestation period. Yet, they are remained to be associated with high perinatal mortality rates in Indonesia (28% perinatal mortality). The aim of this study was to conduct a scoping review to determine the effectiveness of expectant management for less-month pregnancies with preeclampsia. There were five stages for the scoping review. The five stages include: identifying research questions, identifying relevant literature, selecting literature, mapping data, compiling, summarizing and reporting results. All selected articles were taken using quantitative method. From 12 journals gathered, thematic analysis was carried out to identify the main points. We classify the main points of expectant management as an effort to prolong pregnancy, as expectant management with the time of termination of pregnancy, and as expectant management with the right gestational age. The average length of pregnancy in women with preeclampsia without any other risk is 11.5 days. Clinical decisions for termination of pregnancy or expectant management are highly depended on the mother, fetus and laboratory. The experience of the obstetricians also influences the decision to terminate the pregnancy during the maternal evaluation.

Keywords: preterm, pregnancy, preeclampsia, management

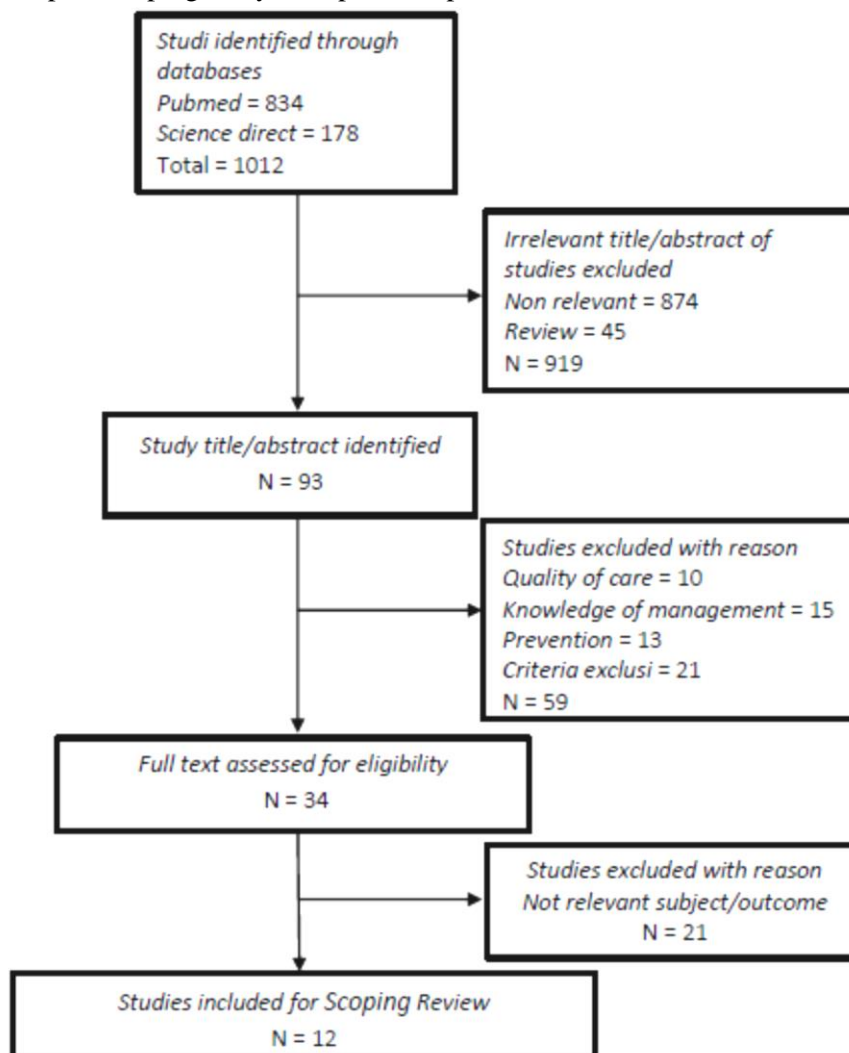
1. INTRODUCTION

Globally, the ratio of maternal mortality in 2013 was 210 maternal deaths per 100,000 live births or around 800 women died per day due to complications of pregnancy or childbirth and 99% occurred in developing countries. This condition is still very far from the Millennium Development Goals (MDGs) target. The main complications that explain almost 75% of maternal deaths are 28% bleeding, 24% pre-eclampsia and eclampsia, 11% infection, puerperium complications (8%), obstetric trauma (5%), and others (1%). While based on the PWS report in 2011, the direct causes of maternal deaths were bleeding (32%), eclampsia (25%), abortion (1%), infection (5%) and others (32%) [1]. Preeclampsia is a major cause of maternal and perinatal morbidity and mortality worldwide. If the pregnancy is more than 34 weeks, patients with severe preeclampsia must be born after stabilizing the mother. When the pregnancy is less than 34 weeks, the decision to end the pregnancy must balance the risks of the mother and fetus. Labor can be delayed to reduce neonatal morbidity and mortality associated with preterm birth if the mother remains stable. Extension of pregnancy at the age of preterm pregnancy can improve perinatal outcomes without increasing maternal complications [2]. Management Expectative is recommended when preeclampsia is diagnosed at <34 weeks of gestation to reduce prematurity. This involves close observation until the condition of the mother or fetus deteriorates until

termination is needed [3]. Childbirth should be done immediately when expectant management is carried out by uncontrolled maternal blood pressure even though giving of antihypertensive drugs at doses is adequate, eclampsia, HELLP syndrome, pulmonary edema, acute renal failure, placental abruption occur. Pregnancy with an unstable mother or fetus during the first 48 hours after admission will be terminated before steroids have been given [4].

2. METHODS

The author used 2 databases, Pubmed and Sciendirect. The total article from 2 database was 1.012, the author used relevant keyword that have been developed and use references list and specific websites. Literature searching limited to articles published in the last 10 years, English, original research (review were excluded), all countries were included. The population in this review is all preterm pregnant women with preeclampsia to find out the expectant management effectiveness of preterm pregnancy with preeclampsia.



Data from 12 articles were extracted to include criteria such as research location, research population, research objectives, methodology, and significant findings or recommendations. The author independently records information and then compares the data extracted.

Table. 1 Data Extration

Author	Country	Method	Aims	Participants	Result
Chen <i>et al.</i> 2015 [5]	China	Retrospektif	This study aims to analyze whether expectant management benefits preeclamptic women.	186	The majority of pregnant women with early-onset preeclampsia can benefit from expectant management with a median 8-day extension of pregnancy, regardless of the severity of early onset preeclampsia and regardless of FGR
Ernawati <i>et al.</i> 2016 [6]	Indonesia	RCT	To present the results of management of premature preeclampsia pregnancies in Indonesia, and the effects of continuous treatment with methylprednisolone on maternal and perinatal outcomes	48	Management Expectation of premature preeclampsia is a realistic choice in Indonesia's main perinatal referral center. Steroids (outside use for fetal lung maturation) should not be used in the management of premature preeclampsia in Indonesia.
Mooney <i>et al.</i> 2016 [3]	Australia	Retrospektif	To check indications of delivery (mother or fetus) for patients with premature preeclampsia and assess whether the characteristics of the disease at presentation are predictions of delivery indications	266	Small molecular therapy can reducing or stabilizing the development of maternal preeclampsia is likely to be beneficial for most patients with premature preeclampsia, reducing maternal morbidity and allowing prolongation of pregnancy and reducing perinatal morbidity
Suzuki <i>et al.</i> 2014 [7]	Japan	Retrospektif	To test the clinical usefulness of expectant management of preeclampsia with severe initial onset.	49	Current results cannot support the clinical usefulness of expectant management of preeclampsia with severe initial onset
Ueda <i>et al.</i> 2016 [2]	Japan	Retrospektif	To assess whether long-term use of magnesium sulfate prolongs pregnancy in patients with severe early-onset preeclampsia	41	Long-term MgSO ₄ therapy receives 7 more days of extending pregnancy with expectant management with careful monitoring of the mother and fetus. Prolonged use of MgSO ₄ can increase the benefits of expectant management in patients with severe initial preeclampsia
Valent <i>et al.</i> 2015 [8]	United State of America	Retrospektif	To compare maternal and infant outcomes from expectantly managed pregnancies complicated by chronic hypertension with superimposed preeclampsia vs. mild preeclampsia up to 37 weeks of gestation	357	Women with superimposed preeclampsia have similar neonatal outcomes but more maternal complications than women with preeclampsia without a severe picture who are expected to succeed <37 weeks

McKinney <i>et al.</i> 2016 [9]	United State of America	Retrospektif	To determine whether fetal growth barriers are associated with a decrease in the interval for delivery in women with preeclampsia who are expected to be managed before 34 weeks.	851	Fetal growth restriction is associated with shortened intervals for delivery in women undergoing management of preeclampsia when the disease is diagnosed before 34 weeks. This data can help in counseling patients about the expected duration of pregnancy, guiding decision-making regarding steroid administration and determining the need for material transportation
Aoki <i>et al.</i> 2014 [10]	Japan	Retrospektif	We investigated whether women with severe fetal growth restriction (FGR <5th percentile) associated with severe preeclampsia (PE) that occurred in the second trimester were candidates for pregnancy management.	33	Regarding management of severe preeclampsia pregnancies that occur in the second trimester, there was no difference in duration of pregnancy extension between groups with and without severe FGR at admission. Because favorable perinatal results can be expected without compromising maternal safety by prolonging pregnancy as pregnant management for severe FGR, it is recommended that women with severe FGR are suitable candidates for pregnancy management.
Vigil-De Gracia <i>et al.</i> , 2014 [11]	Latin America	Retrospektif	The aim of this study was to determine whether the management of pregnancies of severe preeclampsia before 34 weeks of gestation resulted in an increase in neonatal outcomes in countries with limited resources.	267	This study does not show neonatal benefit with management of severe preeclampsia pregnancies from 28 to 34 weeks. In addition, a conservative approach can increase the risk of abruption and is small for gestational age.
Belghiti <i>et al.</i> 2011 [12]	Latin America	RCT	To determine maternal and perinatal outcomes in women with severe preeclampsia at 26 weeks' gestation according to gestational age at the beginning of expectant management and severe fetal growth restriction.	51	High maternal morbidity and very low perinatal survival rates, we do not recommend management of pregnancy before 24 weeks and / or those with severe fetal growth restriction at any gestational age 26 weeks
Bombrys <i>et al.</i> 2008 [13]	United State of America	Retrospektif	The aim of this study was to determine perinatal outcomes and maternal morbidity based on gestational age (GA) at the onset of expectant management in	46	Perinatal results in severe preeclampsia in the mid-trimester depend on GA at the start of pregnancy management and GA at delivery. Given the high maternal morbidity and very low perinatal survival of

			preeclampsia weighing less than 27 weeks.		management pregnant less than 24 weeks, pregnancy should be offered after extensive counseling.
Johnston <i>et al.</i> 2016 [14]	United State of America	Retrospektif	To identify factors associated with shortened latency in Managed	125	In our group of premature women treated with severe non-preeclampsia, an increase in

3. RESULTS AND DISCUSSION

3.1. Descriptive summary and thematic analysis

This review consisted of published articles including 2008-2016, authors in the literature source taken from United States of America (n = 4), Australia (n = 1), China (n = 1), Indonesia (n = 1), Japan (n = 3). Latin America (n = 2). 6 articles taken in this literature are journals with quality (Q1) and 6 journals with quality (Q2). 10 articles used Retrospective design, 2 articles used RCT. 6 Q1 journals conducted in several countries including Latin America, the United States and Japan, six Q2 projects were conducted in the United States, Australia, China, Indonesia and Japan.

3.2. Theme from data

Data extracted from articles within the scope of this review are organized into several themes. The themes included in this literature review include: efforts to extend pregnancy, termination of pregnancy, and recommended gestational age for executive management.

3.3. Expectant Management as an Effort to Prolong Pregnancy

Women who have been diagnosed with preeclampsia usually require immediate labor, to limit maternal complications. This results in premature birth, neonatal and substantial morbidity. Results obtained from several articles relating to efforts to prolong pregnancy suggest that the average extension of pregnancy in women with preeclampsia without any other risk is 7-10 days, an extension of this size is clinically relevant neonatal benefit.

After the initial observation period, administration of MgSO4 begins to maintain blood pressure below 160/110 mmHg. If blood pressure is controlled properly, corticosteroids are given for fetal lung maturity. Fetal well-being is assessed every day by cardiotocography or Doppler examination. Followed by antihypertensive treatment consisting of oral nethidipine, additional methyl dopa if needed.

There are a number of pros and cons of administering steroids for fetal lung maturation, some articles say that steroids do not show significant results for the final outcome to be received by mothers, one of the studies found in Indonesia showed that groups of women who received methylprednisolone experienced more pulmonary edema and pulmonary tuberculosis after birth.

3.4. Expectant Management with The Time of Termination of Pregnancy

The right time for termination of pregnancy in preeclampsia is very dependent on various factors with the main target of maternal safety, and optimal fetal well-being.

Based on research conducted by Chen 2015, clinical decisions for termination of pregnancy or expectant management are highly dependent on the mother, fetus and laboratory. The experience of the obstetrician together also influences the decision to terminate the pregnancy during the maternal evaluation [5].

Indications for immediate delivery to the fetus when results of irregular fetal heart rate monitoring or abnormal fetal tests, which involve obstructed fetal growth. Whereas for mothers the emergence of HELLP syndrome, placental abruption, eclampsia, uncontrolled hypertension,

pulmonary edema, oliguria. The development of HELLP syndrome is defined by evidence of hemolysis in peripheral blood intake, increased lactate dehydrogenase per institutional laboratory standards, decreased platelets and increased liver enzymes.

3.5. Expectant Management with The Right Gestational Age

According to the Belghiti 2011, preeclampsia at less than 26 weeks' gestation was associated with an increase in perinatal mortality and continued maternal morbidity. Most studies that address this question, however, include a limited number of cases, and the results are not encouraging. In addition, adverse perinatal outcomes remain high, and it is not clear whether pregnancy management is safe for the mother when balancing risk with perinatal outcomes. Also, the benefit of management is the presence of fetal growth restriction (SFGR) at a gestational age of less than 26 weeks. Given the high maternal morbidity and very low perinatal survival of expectant management less than 24 weeks, pregnancy is offered after extensive counseling [12].

3.6. Discussion

This review identified 12 relevant publications taken from the last 10 years of sources involving efforts to prolong pregnancy for mothers with preterm pregnancy and preeclampsia, the time of termination of expectant management and the recommended gestational age for expectant management. The findings indicate that expectant management can prolong gestational age so that it reduces the risk of prematurity in infants and can stabilize the condition of the mother. Expectative management is recommended when preeclampsia is diagnosed at <34 weeks of gestation to reduce the risk of prematurity. Expectation management is defined as an extension of pregnancy after the first 48 hours. This period is used to identify women with stable maternal conditions and provide time to accelerate lung maturity with corticosteroids if indicated, at gestational age > 24 weeks gestational age

4. CONCLUSION

Extension of pregnancy, the average for women with preeclampsia without any other risk is 11 days, an extension of this size is clinically relevant neonatal benefits. The main objective of expectant management is to extend the pregnancy without jeopardizing the safety of the mother. Clinical decisions for termination of pregnancy or expectant management are highly dependent on the mother, fetus and laboratory. The experience of the obstetrician together also influences the decision to terminate the pregnancy during the maternal evaluation.

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