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Comparing the Efficacy of Immediate Delivery and Expectant Management in Pregnant Women with Preeclampsia: A Systematic Review of the Literature

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ABSTRACT

Preeclampsia is a serious complication of pregnancy characterized by high blood pressure that can result in end-organ damage, seizures, and death in the pregnant woman. The safest treatment plan for preeclampsia has long been studied and debated. Was it safer to deliver the baby prematurely at 34 weeks, reducing the risk of complications for the pregnant mother? Or was it better to let the baby develop to term in utero, prolonging the dangerous pregnancy? The aim of this project was to analyze previously conducted studies to determine the safest treatment plan for preeclampsia. In this systematic review of randomized controlled trials, pregnant women were placed in either the immediate delivery treatment group or expectant management group, and both fetal and maternal outcomes were observed. Upon inspection of the p-values, the results showed that expectant management was slightly safer than immediate delivery.

INTRODUCTION

- As of now, there is no clear consensus on the best management for pregnant women with preeclampsia between 34-37 weeks pregnant.
- While the best treatment option is up for debate, one thing is clear; the only definitive management is delivery (Chatzakis, 2021).
- Premature delivery at 34 weeks increases the risk of the infant being born with breathing problems, immature lungs, and cardiac problems, among many others.
- Conversely, waiting to deliver until 37 weeks increases the risk of the mother having complications of preeclampsia, including eclampsia, cardiovascular disease, and death.
- Current standards favor expectant management over early delivery. This treatment method allows the fetus more time to develop inside the womb while the pregnant mother is carefully monitored for signs of complications (Broekhuijsen, 2015).

Project Aim: The aim of this systematic review was to determine which treatment option for preeclampsia would result in the best outcomes for both mother and baby.

METHODOLOGY

A literature review was conducted to compare the outcomes between immediate induction of labor and expectant management in pregnant women diagnosed with preeclampsia.

The primary outcome evaluated was fetal and maternal morbidity, and the secondary outcomes included length of NICU stay, APGAR score, and rates of neonatal respiratory distress syndrome.

Articles included in the review were found on Medline-PubMed and ScienceDirect and were accessed through the Yeshiva University school library electronic databases. Randomized controlled trials and two meta-analyses were found for review. The search was restricted to peer-reviewed journal articles published within the last 10 years (2013-2023).

Included in this review are randomized controlled trials where pregnant women diagnosed with preeclampsia were placed in either the immediate delivery treatment group or expectant management group. Both fetal and maternal outcomes were observed. Outcomes were analyzed using significant p-values of 0.05 and below, and positive risk ratio of 1.0 and above. This systematic review evaluates and summarizes the data found in these trials to create a more unified answer to this long-debated question.

RESULTS

- Primary adverse maternal outcome included any maternal morbidity
- Adverse fetal outcome included NICU admission in study 1 and respiratory distress syndrome in study 2 and 3
- Significant p-values and risk ratios are shown in red

Adverse Fetal Outcome	Study 1	Study 2	Study 3
Expectant Management	33%	1.7%	3.4%
Immediate delivery	39%	5.7%	8.1%
P-value	0.0034	0.005	RR: 2.3

Adverse Primary Maternal Outcome	Study 1	Study 2	Study 3
Expectant Management	20%	3.1%	56.0%
Immediate delivery	15%	1.1%	47.5%
P-value	0.005	0.069	RR: 0.86

- Adverse fetal outcomes were greater in the immediate delivery group, and all studies had significant p-values
- Adverse maternal outcomes were greater in expectant management group, and only 1 study had a significant p-value

CONCLUSIONS

After analyzing the data, it was found that there were better fetal outcomes in the expectant management group, but better maternal outcomes in the immediate delivery group. Upon closer inspection of the p-values, it was found that expectant management may be slightly more efficacious than immediate delivery. In terms of maternal outcomes, the results were not all statistically significant in favor of immediate delivery. On the other hand, all the trials regarding fetal outcomes were statistically significant in favor of expectant management. This indicated that fetal outcomes were much more affected by treatment option, making expectant management the slightly safer way to go.

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