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Review Article

THE RELATIONSHIP OF THE FIRST AND THIRD TRIMESTER HEMATOCRIT LEVELS AND PREECLAMPSIA

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Zabol, Iran² Zabol University of Medical Sciences, zabol, Iran**Abstract:**

Introduction: Every year, 75 thousand maternal deaths occur owing to hypertensive disorders. Although numerous studies have been conducted on this disease, its cause is still unknown. Although some risk factors have been reported for preeclampsia, this disease is only diagnosed with its own clinical presentations and it is often diagnosed late.

Methods: In this review article, the databases Medline, Cochrane, Science Direct, and Google Scholar were thoroughly searched to identify the relationship of the first and third trimester hematocrit levels and preeclampsia. In this review, the papers published until early January 2017 that was conducted to study. The relationship of the first and third trimester hematocrit levels and preeclampsia were selected.

Results: The studies indicate that hemodynamic changes during pregnancy have no effect on the increased plasma volume in the second trimester in women suffering from preeclampsia. Thus, it can be concluded that disruption in the increased plasma volume in the second trimester is likely to be a risk signal of suffering from preeclampsia in the subsequent weeks of pregnancy.

Discussion and Conclusion: Determining hematocrit is one of the common and necessary measures taken during pregnancy. If hematocrit level of the first trimester is more than 43%, it has to do with the preeclampsia at the end of the third trimester. Every year, 75 thousand maternal deaths occur owing to hypertensive disorders.

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INTRODUCTION:

Preeclampsia is a specific syndrome of pregnancy in which the perfusion of the organs decreases owing to vascular spasm and endothelium activation, and as a result, maternal and fetal presentations (1). This syndrome is one of the most important complications of pregnancy and constitutes the three most important reasons for maternal mortality with hemorrhage and infection (2). The rate of preterm labors and the intrauterine growth delay of the fetus increase alongside the preeclampsia. In severe preeclampsia, the prenatal mortality is 15%, while it is 60% in the incidence of preeclampsia and Hellp syndrome (3). In these conditions, the maternal complications are the increased risk of early placental separation, kidney failure, pulmonary edema, intracerebral hemorrhage, and intravascular coagulation (4). It is believed that numerous factors such as abnormal evolution of the placenta, predisposing factors in mother, oxidative stress, immunity incompatibility to allograft tissues of the fetus, and genetic susceptibility cause preeclampsia. These factors start to work from the beginning of the pregnancy (5).

METHODS:

In this review article, the databases Medline, Cochrane, Science Direct, and Google Scholar were thoroughly searched to identify The relationship of the first and third trimester hematocrit levels and preeclampsia . In this review, the papers published until early January 2017 that were conducted to study The relationship of the first and third trimester hematocrit levels and preeclampsia were selected.

FINDINGS:

The studies indicate that hemodynamic changes during pregnancy have no effect on the increased plasma volume in the second trimester in women suffering from preeclampsia (6). Thus, it can be concluded that disruption in the increased plasma volume in the second trimester is likely to be a risk signal of suffering from preeclampsia in the subsequent weeks of pregnancy (7). However, with respect to the relationship between blood indices of the first trimester and preeclampsia, few studies have been conducted showing different findings and limitations (7). Early diagnosis of preeclampsia is one of the most important functions of pregnancy cares. However, there is still no reliable criterion for the early diagnosis of this disease. There are numerous clinical, biophysical, and biochemical tests based on preeclampsia prediction (8). The findings of the studies indicate their inaccuracy in the early diagnosis of this disease. High levels of hemoglobin in the first trimester is likely to be a warning sign for suffering from preeclampsia in the subsequent weeks of pregnancy (9).

DISCUSSION AND CONCLUSION:

Determining hematocrit is one of the common and necessary measures taken during pregnancy (10). If hematocrit level of the first trimester is more than 43%, it has to do with the preeclampsia at the end of the third trimester (11). Every year, 75 thousand maternal deaths occur owing to hypertensive disorders. Although numerous studies have been conducted on this disease, its cause is still unknown (12). Although some risk factors have been reported for preeclampsia, this disease is only diagnosed with its own clinical presentations and it is often diagnosed late(13). Moreover, hematocrit levels of the third trimester have to do with the incidence of preeclampsia in the following weeks (14). This relationship does not depend on age, weight, and other risk factors of preeclampsia. Thus, giving due attention to hematocrit levels is likely to be helpful for identifying individuals susceptible to preeclampsia and conducting preventive measures.

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