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# Analysis of Pregnancy Infection as a Risk Factor with the Event of Preeclampsia in Konawe Selatan District

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ABSTRACT

**Introduction:** The results of interviews with several midwives explained that preeclampsia patients were reported to be due to comorbidities, low hemoglobin, income, low education, and unhealthy lifestyles, obesity, age over 35 years with parity of one or parity of 4 or more children. . Therefore, the authors are interested in conducting research on risk factors with the incidence of preeclampsia.

**Method:** Quantitative Research by designcase control studies. The population of all patients with preeclampsia was 174 cases with a sample of 120 respondents at the South Konawe District Health Center. The sampling technique used is simple random sampling.

**Result:** The results of Chi Square analysis 56.26 > $X^2$ Table 3.841 which means that there is a significant relationship between the infection variable and the incidence of preeclampsia.

**Conclusion:** Infection risk factors for the incidence of preeclampsia in pregnant women with preeclampsia have a nine-fold risk.

## Introduction

Preeclampsia is a complication of pregnancy and is one of the main causes of maternal morbidity and mortality in Indonesia. Preec lampsia is characterized by increased blood pressure (hypertension), the presence of protein and albumin in the urine and edema. Preeclampsia can occur in about 3% to 5%, Preeclampsia is a complication that often occurs in pregnant women and requires serious treatment. Preeclampsia remains a problem for pregnant women that can occur in late and late pregnancy.[1]

According to the World Health Organization (WHO), every day 800 mothers die from complications of pregnancy and childbirth, while the maternal mortality rate in developing countries including Indonesia is 240 per 100,000 in 2012 to 2017, the maternal mortality ratio is estimated at 359 per 100,000 live births.[2]

According to reports, the number of maternal deaths in Indonesia decreased from 4,226 to 4,221 between 2018 and 2019. The most common causes of maternal death in 2019 were 1,280 cases of bleeding, and 1,066 cases of high blood pressure during pregnancy, which are signs of preeclampsia and maternal death. pregnant due to infectious diseases as many as 207 cases.[3]

Maternal mortality is still a problem for maternal and child health in Indonesia. The high maternal mortality rate in Indonesia is 359 per 100,000 live births (KH), compared to the 2015 Millennium Development Goals (MDGs) of 102 per 100,000 or 1.02 each 1,000.[4]

The maternal mortality rate compiled from the 2020 Family Health Program records by the Ministry of Health shows 4,627 maternal deaths in Indonesia. This figure shows an increase compared to 2019 which amounted to 4221 deaths. Based on the cause, the majority of cases of gestational hypertension continue with preeclampsia. In 2020, deaths due to bleeding were 1,330 cases, deaths due to preeclampsia were 1110 cases, and deaths from cardiovascular disorders were 230 cases.[5]

Data on preeclampsia cases in the South Konawe region showed the number of pregnant women was 102 cases in 2018, 142 cases in 2019, 136 cases in 2020, and 174 cases of preeclampsia in 2021. There are 3 known causes of preeclampsia with a history of infection as many as 96 cases, 8 cases of late pregnancy or third trimester, 14 cases of preeclampsia detected in mothers over 35 years of age, other factors such as close pregnancy distance, medical history of previous hormonal contraceptive use, offspring with high blood pressure in the family and complications during pregnancy.[6]

Efforts to Accelerate Maternal Mortality Reduction include quality services for all mothers, including health services for pregnant women, delivery assistance by trained health workers in health facilities, and postpartum services for mothers and children, family planning services, including special care and referrals if complications occur. Therefore, the authors are interested in conducting a study entitled Analysis of Pregnancy Infections as a Risk Factor for the Incidence of Preeclampsia in South Konawe Regency.

## Method

This research is quantitative by designcase control studies. The study was conducted from April to June 2022. The population of all patients with preeclampsia was 174 cases with a sample of 120 respondents at the South Konawe District Health Center. The sampling technique used is simple random sampling.

## Result

**Table 1** states that Among the 120 respondents who declared preeclampsia and were at risk there were 93 (77.50%) and of the 120 respondents who were declared not preeclampsia and at risk were 34 (28.44%). This means that respondents with preeclampsia are more likely to be found due to infection factors compared to respondents who do not have preeclampsia.

**Table 2** it is known from the results of Chi Square analysis $56{,}26 > X^2_{\text{Tabel}}$ 3,841 which means that there is a significant relationship between the infection variable and the incidence of preeclampsia and the results of the epide miological analysis obtained an OR value of 8.71 which means it has a nine times risk where the threshold value the lower limit is 4.86 and the upper threshold value is 15.63, where the value is also known.

**Table 1. Frequency Distribution of Infectious Factors**

| Infection | Preeclampsia | | No Preeclampsia | |
|---|---|---|---|---|
| | f | % | f | % |
| at risk | 93 | 77.50 | 34 | 28.33 |
| No Risk | 27 | 22.50 | 86 | 71.67 |
| Total | 120 | 100 | 120 | 100 |

**Table 2. Risky Infection Factors for Preeclampsia Incidence in Pregnant Women**

| Infection | Preeclampsia | | | | Σ | % |
|---|---|---|---|---|---|---|
| | Case | | Control | | | |
| | f | % | f | % | | |
| at risk | 93 | 77.50 | 34 | 28.33 | 127 | 52.92 |
| No risk | 27 | 22.50 | 86 | 71.67 | 113 | 47.08 |
| Total | 120 | 100 | 120 | 240 | 240 | 100 |

## Discussion

### Infectious factors are at risk for the incidence of preeclampsia in pregnant women

It is known from the results of data analysis and obtained an OR value of 8.71 which means it has a nine times risk for mothers with a history of infection experiencing preeclampsia compared to pregnant women who do not have a history of preeclampsia.

Infectious diseases in pregnancy are diseases caused by viruses or bacteria that are very dangerous for pregnant women. This disease will be more risky if and can cause death of the fetus in pregnant women. This disease becomes a problem in reproductive health in Indonesia, this is because infectious diseases of pregnancy can interfere with reproductive health and fetal development in the body of pregnant women.[7]

The impact of infection in pregnancy, especially for pregnant women, cannot be ignored. This problem is a big problem that requires special handling at a high cost but the results are not very satisfactory.[8]

Infectious diseases in pregnancy are a concern of all parties, considering their impact on human safety at this time as well as the safety of the next generation or descendants. Therefore, it is necessary to treat it as early as possible by keeping the environment and food clean and avoiding unhealthy sexual relations.[9]

Pathogenic microorganisms in the vagina can cause infections and problemsmedicalother. Intravaginal microbes that can cause infection in newborns include gonorrhea, trachoma, and group B and E streptococci. This is Escherichia coli, which causes sepsis and death. Infectious diseases: maternal infection is characterized by an increase in the total white blood cell count and clinical symptoms. White blood cells are often elevated during pregnancy. A normal white blood cell count, or white blood count, in a pregnant woman ranges from 6000 to 17,000 cells/mm. [10]

Total white blood cell count Mean age Mean cell value / mm3 Newborn 9000-30000 Infants 5700-18000 Children 10 years old 4500-13500 Adults 4500-10000 Femalepregnant60-17000 postpartum mothers 9700-25700, white blood cell count is an early sign of infection. Infection during pregnancy can lead to premature birth. [11]

Previous studies have shown an association between preeclampsia and the cause of infection history wherein there are also differences in variants with a history of pregnancy infection, parity, hemoglobin, education, age, pregnancy complications, and surgery history. This particular study was conducted in a hospital in West Java.[12]

South Konawe Regency is the highest number of preeclampsia incidence which is thought to be caused by several predisposing factors, namely pregnant women with a history of infection are still commonly found, thus researchers assume that the need for prevention and early detection of preeclampsia events by understanding related to early detection of preeclampsia events for cadres in every village.

## Conclusion

Infection risk factors for the incidence of preeclampsia in pregnant women with preeclampsia have a nine-fold risk. Expected Health Center employees are more proactive in preventing the incidence of preeclampsia with more intense socialization related to maternal and child health. Research respondents or pregnant women with preeclampsia are expected to be more proactive in carrying out their pregnancy check-up visits at least 4 times during the pregnancy process

in order to detect early the possibility of preeclampsia or other pregnancy complications.

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