ABSTRACT

Background

Preeclampsia is one of the leading causes of maternal morbidity and mortality and remains a major contributor to adverse pregnancy outcomes. In Indonesia, hypertensive disorders of pregnancy, including preeclampsia, continue to play an important role in maternal mortality. Several studies have suggested that maternal infections during pregnancy, particularly urinary tract infection (UTI), may contribute to the development of preeclampsia through inflammatory responses, endothelial dysfunction, and placental hypoxia. However, existing evidence regarding the association between UTI and preeclampsia remains inconsistent, with variations across populations, study designs, and healthcare settings.

Objective

This study aimed to analyze the association between urinary tract infection and preeclampsia among pregnant women treated at RSUP Dr. Sardjito, Yogyakarta, while considering maternal and obstetric factors that may act as confounders.

Methods

A retrospective case–control study was conducted using secondary data obtained from medical records of hospitalized pregnant women at RSUP Dr. Sardjito in 2024. A total of 59 participants were included, consisting of 29 women with preeclampsia and 30 women without preeclampsia. UTI status was determined based on documented diagnoses supported by urine flow cytometry findings. Bivariate analyses were performed to assess crude associations, followed by multivariate logistic regression to adjust for potential confounding variables, including maternal age, pre-pregnancy body mass index (BMI), parity, gravidity, and fetal count.

Result

Urinary tract infection was identified in 40.7% of participants and was more frequently observed among women with preeclampsia; however, the association was not statistically significant in both bivariate ($p = 0.089$) and multivariate analyses (adjusted OR 2.99; 95%

CI 0.61–14.61; p = 0.176). Pre-pregnancy BMI showed a significant independent association with preeclampsia, with higher BMI increasing the risk of preeclampsia (adjusted OR 1.33; 95% CI 1.07–1.65; p = 0.011). Nulliparity was more frequently observed among women with preeclampsia and was significantly associated in the bivariate analysis; however, this association did not persist after multivariate adjustment. Maternal age, gravidity, and fetal count were not independently associated with preeclampsia.

Conclusion

In this study, urinary tract infection was not independently associated with preeclampsia after controlling for confounding factors. Pre-pregnancy BMI emerged as the most influential maternal factor associated with preeclampsia, emphasizing the importance of maternal metabolic health in the prevention of hypertensive disorders during pregnancy.

Keyword

Preeclampsia; Urinary tract infection; Pre-pregnancy body mass index; Pregnancy