

**ABSTRACT****Analysis of Anti-Mullerian Hormone (AMH) Levels in The Women Urine****Didik Rio Pambudi**

**Background:** Ovarian reserve examination in women with Polycystic Ovary Syndrome (PCOS) has been using levels of Anti-Mullerian Hormone (AMH) in the blood. The use of blood samples like this can give patients pain and discomfort. This research is expected to be able to provide an alternative examination of AMH levels through urine. Because basically urine can be an indication of various physiological functions in the body related to metabolism and excretion.

**Objective:** This study aims to determine AMH levels in the urine of women without and with polycystic ovary syndrome (PCOS). 46 urine samples of patients were performed.

**Methods:** The population in the study were women aged 20 years to 40 years with normal and abnormal menstrual cycles. Research subjects were 23 non-PCOS women with normal menstrual cycles and 23 PCOS women as controls. Taking urine samples to check AMH levels, 10-20 mL of middle morning urine is taken by the laboratory of the RSKI (Special Infection Hospital) of Airlangga University. This study were analyzed by ELISA. This research has followed the ethics committee test with the results of the Ethical Eligibility Certificate No. 78/EC/KEPK/FKUA/2019.

**Results:** Measurement of AMH levels in urine in non-PCOS women and women with PCOS was  $0.214 \pm 0.176$  ng/mL and  $0.467 \pm 0.399$  ng/mL. For Testing the difference of AMH levels in urine non-PCOS women and women with PCOS has been carried out using the Mann-Whitney test obtained  $p = 0.011$  ( $p < 0.05$ ) which means there is a significant difference between AMH levels in urine non-PCOS women PCOS against women with PCOS. In this study, a clinical analysis was carried out to determine the cut-off from the study with the ROC Test. The results obtained from the ROC test is AUC values of 0.282 ng/mL with the best sensitivity and specificity values, each of 0.391 and 0.391. From the sensitivity and specificity values, it can know that the cut off value is 0.2460 ng/mL.

**Conclutions:** In this study it can be concluded that AMH levels in urine can be detected. There is a significant difference in AMH levels in urine women with PCOS compared to non-PCOS women but AMH levels in urine cannot be used as an early detection aid in women suspected of PCOS.

**Keywords:** *Anti-Mullerian Hormone, Urine, Polycystic Ovary Syndrome, Women.*