**ABSTRACT**

Urinary System includes kidneys, bladder, ureters and urethra. This is the major system involves electrolyte balance of the body and filters the blood and excretes the waste products in the form urine. Even the small disturbance in the renal function will step in a disasters manifestation. Among them we are considering the two diseases that affect the system are acute cystitis and acute nephritis. This paper presents the implementation of three supervised learning algorithms, ZeroR, J48 and Naive Bayes in WEKA environment. The classification models were trained using the data collected from 120 patients. The trained models were then used for predicting the acute cystitis or acute nephritis of the patients. The prediction accuracy of the classifiers was evaluated using 10-fold cross validation and the results were compared.