**ABSTRACT**

Chronic Kidney Disease (CKD) is a gradual decrease in renal function over a period of several months or years. Diabetes and high blood pressure are the most common causes of chronic kidney disease. The main objective of this work is to determine the kidney function failure by applying the classification algorithm on the test result obtained from the patient medical report. The aim of this work is to reduce the diagnosis time and to improve the diagnosis accuracy using classification algorithms. The proposed work deals with classification of different stages in chronic kidney disease according to its severity. The experiment is performed on different algorithms like Backpropagation Neural Network, Radial Basis Function and Random Forest. The experimental results show that the Radial basis function algorithm gives better result than the other classification algorithms and produces 85.3% accuracy