Abstract

Contemporary research has shown that prostate cancer is the most common cancer amongst older men which can lead to death. However, it has been proven that early detection for most cancers is known to help in making therapeutic decisions in urologic medicine and oncology. Current methods of screening for prostate cancer carried out through blood PSA tests (presence of high Prostate Specific Antigen in the blood) and digital rectal examinations due to their morphological nature lead to a high percentage of False Positive Test Results (FPTR). The occurrence of this FPTR can be reduced by employing Artificial Intelligence (AI) techniques such as Artificial Neural Network (ANN) in evaluating the need for a patient to undergo biopsy. The goal of this research entails the proposition of a model for the early detection of prostate cancer to enhance early detection so as to enable early commencement of intervention to increase the chances of successful treatment and reduction in mortality rates. This research was predicated on the review and analysis of current AI paradigms tailored towards effective detection of prostate cancer. Research findings showed that the PSA test and Digital Rectal Examination (DRE) are not adequate enough to detect prostate cancer but the deployment of
assay specific ANN model, which is a machine learning technique reduces the amount of unnecessary biopsies.

References

21.
Index Terms

Computer Science
Artificial Intelligence

Keywords

Prostate Cancer, Artificial Intelligence, Prostate Specific Antigen, Digital Rectal Examination, Biopsy.