

ABSTRACT

Cancer is ranked as the leading cause of death and an important obstacle to increasing life expectancy worldwide, with 2.26 million new cases in 2020 according to GLOBOCAN data. Cancer treatment usually includes surgery, radiotherapy, systemic therapy, and Complementary and Alternative Medicines (CAM). One CAM chosen by patients is Electro-Capacitive Cancer Therapy (ECCT), a cancer therapy tool using low-intensity, low-frequency electro-static waves. The direction for ECCT use depends on the patient's medical record, including cancer histology, prior treatments, and other factors affecting ECCT optimization. An expert system can assist in directing ECCT use. This study aims to determine the effectiveness of the forward chaining method as an expert system in considering therapy recommendations based on the severity of breast cancer in the use of ECCT and aiding the direction of ECCT use to ensure patients receive treatment according to cancer severity and histology type, while minimizing side effects. Forward chaining guides based on patient medical records. This study uses a confusion matrix for testing, with reference data from actual patient records, comparing manual ECCT prescription data at PT Ctech Lab Edwar Teknologi with data from the forward chaining method. Of the 16 data sets tested, the accuracy reached 100%. These results indicate that the designed system can accurately direct ECCT therapy for breast cancer patients.

Keywords: *Breast cancer, ECCT, expert system, forward chaining*