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Computational Learning Method for Oncological Patient Logistic Analysis

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Introduction

Oncology is a branch of medicine that focuses on cancer detection, treatment, and prevention. Cancer develops when abnormal cells proliferate uncontrollably and spread throughout the body. Recent advances in genetics and biology have transformed cancer treatment. Many cancer types are now curable. An oncologist leads a multidisciplinary care team that includes surgeons, radiologists, pathologists, nurses, and social workers. These teams are committed to providing cancer patients with care that is supported by research. Internal medicine's oncology is frequently used interchangeably with medical oncology. Other types of oncology include gynecologic oncology, which focuses on the medical and surgical treatment of cancers affecting female reproductive organs, paediatric haematology and oncology, which provides medical care for babies and children with cancer, radiation oncology, which focuses on cancer radiation treatment, and surgical oncology, which uses surgery to diagnose and treat a variety of malignancies. Thousands of new cancer cases are expected in Iraq over the next two years, between 2018 and 2021. The Hospital Cancer Registries are a source of systematically organised and publicly accessible clinical data for the disease in Iraq, and they represent a potential target for data mining and pattern discovery.

Discussion

Survival analyses involve observing events as they change over time, with death being the most common event. They are carried out using the Kaplan-Meier statistical method, which was originally developed to measure the frequency or number of patients who survived a given medical treatment. In this manner, the probability of survival over time is calculated by comparing the effects of various factors on patient survival [1-3]. Large health-care organisations currently collect and store a large amount of data. These statistics are derived from medical records and hospital records, and the Hospital Cancer Registry is a database that collects data from hospitals throughout Iraq. The volume of data provided by this system necessitates a more robust and adequate analysis in order to generate useful and high-quality knowledge from it.

Data mining uncovers previously hidden knowledge in databases and can be used to forecast trends or describe historical characteristics. DM techniques include classification, generalisation, characterisation, clustering, association, evolution, pattern discovery, data visualisation, and rule-guided mining. The objective of applying DM is the process of discovering knowledge in databases or Knowledge Discovery in Databases (KDD) as "the non-trivial process of identifying valid patterns, unknown, potentially useful, and ultimately understandable data". Currently, the use of data mining techniques allows for the extraction of useful information from complex biological data [4,5]. This is directly related to the field of bioinformatics, whose main goal is to integrate and study any biological data in a strategic manner using information technology and computer science.

Conclusion

In terms of the development of new technologies from this expanding area, recent searches have revealed the prioritisation of process optimisation, such as diagnostic imaging, risk classification of patients, risk prediction in transfusion, and identification of new risk factors for diseases such as cancer and diabetes. Aside from these applications, the algorithms are widely used to find potential new drug combinations for the treatment of diseases such as cancer and Parkinson's disease.

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