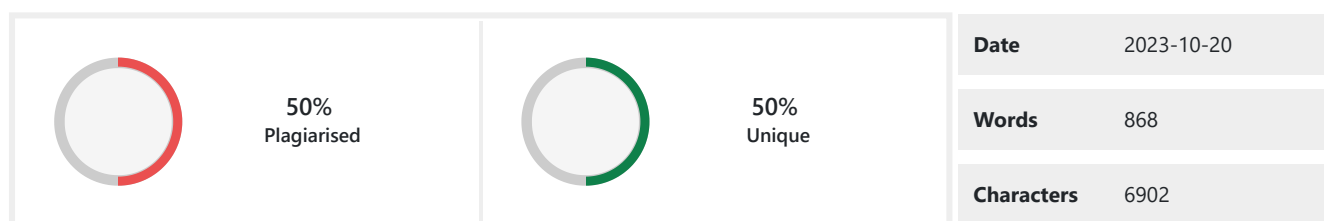


PLAGIARISM SCAN REPORT



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Hepatocellular carcinoma (HCC) is an aggressive tumour which remains the second-most frequent cause of cancer death worldwide. According to the different statuses of patients with HCC, several guidelines recommend various treatment strategies. **Due to the aggressive biological behavior of HCC, recurrence is not uncommon.** Therefore, it is essential to predict therapeutic outcomes prior to treatment so that physicians can design a personalized therapeutic strategy for each patient.

The conventional process of model establishment is selecting the appropriate predictors, utilizing them for statistical analysis and ultimately deriving a multivariate predictive model.

However, predictive models developed by traditional statistical methods, such as the logistic regression (LR) model and Cox proportional hazards model, are not reliable because the factors included in the **models are too simple and utilize a low evidence level.** Machine learning (ML) is a powerful tool for generating high-level medical features or combining quantitative radionics parameters with efficient algorithms. ML algorithms simulate human learning to detect hidden patterns

within HCC therapeutic data that are clearer than those derived from traditional statistical methods. With this in mind, ML algorithm has been used in many studies to predict the therapeutic outcome of HCC patients.

Thus, in this review, the advantages and disadvantages of each ML algorithm are clarified, and relevant literature on the prediction of therapeutic outcomes after various treatment modalities for HCC is described.

Liver cancer is the most dangerous cancer among variety of cancer. Due to this every third living is cause of death and which is nearly a sixth most common cancer in the world. Liver cancer is also known by the name hepatic cancer and most of the liver cancer is common to Hepatic cellular carcinoma (HCC).

Liver cancer is the uncontrolled growing of tissue within the liver.

Tumours are of two types such as non-cancerous cells (benign) and cancerous cells (malignant).

There are 12000 deaths per year in world due to liver cancer.

To avoid this, problem need to be analysed in earlier stages because earlier detection can help doctors to save lives and does not make very much complication on the human health.

There are various techniques to acquire the image of liver from the patients those are Computed Tomography (CT), Magnetic Resonance Imaging (MRI) and Ultra Sounds but CT image is represented as accurate liver cancer diagnosis imaging modularity.

Hence Computed Tomography has extent use in the field of medical technology.

However detection of the liver lesion, liver image segmentation and Liver lesion extraction are crucial because it requires experienced radiologist to identify differentiable tissues between liver and non-liver.

Sometimes experienced radiologist also failed to identify the tumour in earlier stages because of tumour which are invisible to the human eye.

Generally there are many improvements in field of medical imaging techniques such as image processing machine learning techniques and artificial intelligence and these technologies can be used by experience radiologist.

Together with experienced radiologist and medical technology for computer aided diagnosis results in the accurate characterization of liver lesion.

These techniques will provide clinical assistance to the doctors to improve the diagnosis and maximizes the accuracy of the

diagnosis. **This technique helps in avoiding surgery and biopsy risks toward the victim.** Tumour extractions in the liver CT images are absolutely necessary process in computer aided surgery and computer aided nature of illness identification. But still authoritative analysis and prior detection of liver cancer is a significant difficulty in the field of practical radiology doctors should know the feature of the tumour in

order to give effective treatment for victim also helps doctors in further diagnosis.

Any general method of automatic/semi-automatic computer aided system will help doctors to provide the effective treatment for the patients by diagnosing the liver cancer feature.

Liver cancer, also known as hepatic cancer is a cancer which starts in the liver, and not from another organ which eventually migrates to the liver.

In other words, there may be cancers which start from somewhere else and end up in the liver - those are not (primary) liver cancers. **Cancers that originate in the liver are known as primary liver cancers.** Liver cancer consists of malignant hepatic tumours (growths) in or on the liver. The most common type of liver cancer is hepatocellular carcinoma (or hematoma or HCC), and it tends to affect males more than females. According to the National Health Service (NHS), UK, approximately 1,500 people in the United Kingdom die from HCC each year. The World Health Organization (WHO) says that liver cancer as a cause of death is reported at less than 30 cases per 100,000 people worldwide, with rates in parts of Africa and Eastern Asia being particularly high. Experts say that common causes of HCC are regular high alcohol consumption and injecting drugs with shared needles. Signs and symptoms of liver cancer tend not to be felt or noticed until the cancer is well advanced. Hepatocellular carcinoma (HCC) signs and symptoms may include Jaundice, Abdominal pain, Unexplained weight loss, Hepatomegaly, Fatigue, Nausea, Emesis (vomiting), Back pain, General itching, Fever. Liver cancer, if not diagnosed early is much more difficult to get rid of. The only way to know whether you have liver cancer early on is through screening, because you will have no symptoms.

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