Applications of Data mining Techniques for Early Diagnosis of Hepatic Disease

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Abstract Liver is placed on the right side of the abdomen and the chest just below the diaphragm. The liver has a conical shape and its surface is smooth, soft, and rubber-like. The liver is able to regenerate itself. The 10 to 20 percent of the liver is enough to sustain life. But with removing it the body, death can occur within 24 hours. Liver is necessary for metabolic functions of the body and more than 500 different actions. Liver cells are one of the most active celles of the body. Each cell acts as an endocrine and exocrine gland. The complexity of this organ makes it high risk and sensitive to easily attack by a variety of diseases (such as cancer, fatty liver, cirrhosis, hepatitis, etc.). Therefore, identification of Liver Diseases is one of the main interests of researchers and clinicians. Data mining is the science of extracting unknown patterns huge amount of raw data. This extracted pattern are usefull for prediction or identification of events before their actual happening time. In the recent decades, data mining techniques applications for identifying or early detection of many diseaes (in the early days of infection) such as cancers, Diabetes, heart disease and etc, and also prediction of possibility of infection by special disease through the discovery of association rules and study the related factors, is used. In this thesis, we attempt to study liver diseases, their symptoms and their treatment. Then, the related works about data mining applications for early detection of various disease is reviewed and different algorithms such as: decision tree, SVM, Rough set, Neural Networks and Naïve bayes which according to many studies that are done by many researchers all around of the world had the highest accucary rate in detecting hepatitis patients, are applied. In the next step, a hybrid approach is presented for improving the accuracy percentage of prediction. In this proposed hybrid approach, we used three alogorithms including: neural network, Rough set and naïve bayes for creating our proposed hybrid model. Our experimental results are shown that our

proposed method has higher performance and accuracy in compare with other methods.

Keywords : data mining,Hepatic Disease