A SURVEY ON HYBRID TECHNIQUES USING

HEART DISEASE PREDICTION

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ABSTRACT

Heart disease is result of variation of functionality and structure of heart. This data can be used for the early detection of the heart disease, which can support to reduce the number of heart attacks. Heart disease is a most harmful one that will cause death. It has a serious long term disability. This disease attacks a person so instantly. Medical data is still information rich but awareness poor. Therefore diagnosing patients correctly on the basis of time is an difficult function for medical support. An invalid diagnosis done by the hospital leads for losing reputation. The precise diagnosis of heart disease is the dominant biomedical issue. To develop an effective treatment using data mining techniques that can help curative situations. Further data mining classification algorithms like decision trees, neural networks, Bayesian classifiers, Support vector machines, Association Rule, K- nearest neighbor classification are used to diagnosis the heart diseases. Among these algorithms Support Vector Machine (SVM) gives best result[2].

Keywords—Heart disease, Decision tree, Naive bayes, K-nearest neighbor, Support vector machine.

I. INTRODUCTION

Heart disease is the type of disease that involve the heart or blood vessels. It is one of the most-flying diseases of the modern world. The diagnosis of the heart disease should be accurately and correctly. Normally it is diagnosed by using a medical specialist. If we use the techniques integrated with the medical information system then it would be more
advantageous and it will reduce the cost also. This can be done after comparing different data mining techniques for finding their suitability.

Data mining combines statistical analysis, machine learning algorithms and database technology for extracting the hidden patterns from large databases. The heart disease diagnosis depends on clinical and morbid data. The medical professionals are assisted by heart disease prediction system in predicting the status of heart disease and it is done based on the clinical data of patients. Researchers apply various data mining techniques to help medical professionals with improved accuracy.

II. HEART DISEASE

Heart is vital part or an organ of the body. Life is subject to proficient working of heart. The operation of heart is not proper, it will influence the other body parts of human, for example, mind, kidney, etc. Heart is simply a pump, which pumps the blood through the body. In the event that if blood in body is insufficient then many organs like cerebrum suffer and if heart quits working by, death happens inside minutes. Life is totally focus to effectual operational of the heart[2].

2.1 DANGER OF HEART INFECTION

- Family history of coronary illness
- Smoking
- Poor eating methodology
- High pulse

- Cholesterol
- High blood cholesterol
- Obesity
- Physical inertia

III. SYMPTOMS OF A HEART ATTACK

- Discomfort, weight, largeness, or misery in the midsection, arm, or beneath the Breastbone
- Discomfort emanate to the back, jaw, throat, or arm
- Fullness, heartburn, or stifling feeling (indigestion)
- Sweating, queasiness, heaving, or unsteadiness
- Extreme shortcoming, nervousness, or shortness of breath
- Rapid or not regular heart beats

3.1 TYPES OF HEART DISEASE

Heart illness is a wide term that incorporates different sorts of sicknesses influencing diverse segments of the heart. Heart signifies "cardio." Therefore, all heart sickness fit in with the class of cardiovascular ailment[2].

3.1.1 CORONARY ILLNESS

It otherwise called coronary supply route malady (CAD), it is the most well known kind of coronary illness over the world. It is a condition in which plaque stores obstruct the coronary veins prompting a lessened supply of blood and oxygen to the heart[2].

3.1.2 ANGINA PECTORIS

It is a therapeutic term for midsection torment that happens because of deficient supply of blood to the heart. Otherwise called angina, it is a cautioning sign for heart assault. The midsection torment is at interims running for few seconds or minutes[2].

3.1.3 CONGESTIVE HEART DISAPPOINTMENT

It is a condition where the heart can't pump enough blood to whatever is left of the body. It is generally known as heart disappointment[2].

3.1.4 CARDIOMYOPATHY

It is the debilitating of the heart muscle or a change in the structure of the muscle because of lacking heart pumping. A portion of the normal reasons for Cardiomyopathy are hypertension, liquor utilization, viral diseases, and hereditary imperfections[2].

3.1.5 INNATE CORONARY ILLNESS

It alludes to the development of an irregular heart because of a deformity in the structure of the heart or its working. It is additionally a sort of innate ailment that kids are conceived with it[2].

3.1.6 ARRHYTHMIAS

It is connected with an issue in the musical development of the pulse. The pulse can be abating, quick, or unpredictable. These unusual heartbeats are brought about by a short out in the heart's electrical framework[2].

3.1.7 MYOCARDITIS

It is an aggravation of the heart muscle normally brought on by popular, parasitic, and bacterial contaminations influencing the heart. It is an exceptional malady with few indications like joins agony, leg swelling or fever that can't be specifically identified with the heart[2].

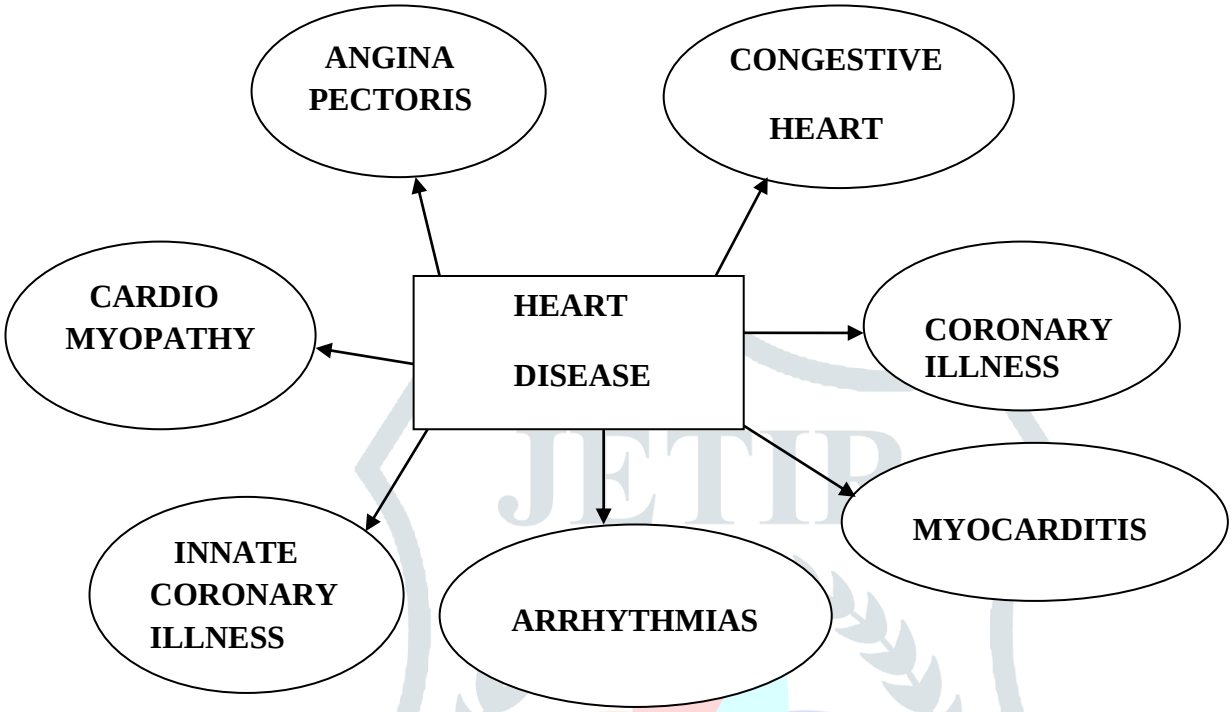

Fig 1.Types of Heart Diseases

IV. APPLICATION OF DATA MINING IN HEALTH CARE

- Treatment effectiveness
- Healthcare management
- Customer relationship management
- Fraud and abuse
- Medical Device Industry
- Hospital Management
- Disease Prediction

V.CONCLUSION

A heart stabbing with the goal that you can act quick on the off chance that you or somebody you know may show at least a bit of kindness physical attack. The chances of survival are more prominent when crisis treatment starts rapidly. It concentrates on the investigation of different methodologies of heart assault sickness forecast explore papers are broke down and considered[5]. It has been shown in results that accuracy improved for both classifiers when applied to selected features. Proposed approach of feature selection not only reduced size of dataset but also enhanced the performance of both the classifiers models[6].

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