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Analysis of Cardiovascular Diseases Using Artificial Neural Network

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Abstract : In this paper, a study has been made on the possibility and accuracy of early prediction of several Heart Disease using Artificial Neural Network. (ANN). The study has been made in both noise free environment and noisy environment. The data collected for this analysis are from five Hospitals. Around 1500 heart patient's data has been collected and studied. The data is analysed and the results have been compared with the Doctor's diagnosis. It is found that, in noise free environment, the accuracy varies from 74% to 92%and in noisy environment (2dB), the results of accuracy varies from 62% to 82%. In the present study, four basic attributes considered are Blood Pressure (BP), Fasting Blood Sugar (FBS), Thalach (THAL) and Cholesterol (CHOL.). It has been found that highest accuracy(93%), has been achieved in case of PPI(Post-Permanent-Pacemaker Implementation), around 79% in case of CAD(Coronary Artery disease), 87% in DCM (Dilated Cardiomyopathy), 89% in case of RHD&MS(Rheumatic heart disease with Mitral Stenosis), 75 % in case of RBBB +LAFB (Right Bundle Branch Block + Left Anterior Fascicular Block), 72% for CHB(Complete Heart Block) etc. The lowest accuracy has been obtained in case of ICMP (Ischemic Cardiomyopathy), about 38% and AF(Atrial Fibrillation), about 60 to 62%.

Keywords : coronary heart disease, chronic stable angina, sick sinus syndrome, cardiovascular disease, cholesterol, Thalach
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