The Establishment of Bayesian Coronary Artery Disease Prediction Model

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This poster will demonstrate how we build up the module of Bayesian Coronary Artery Disease Predicting Evidence-Based Medicine. The system-module may help the young professional understand the effect of factors for referring patients to take the invasive examination of Angiographic. Moreover, the non-invasive information-tech also can perform as the screening tool on a clinical or a community-based epidemiology.

**Objectives:** The purposes of this research were to develop an expert system prototype for assisting diagnosis of coronary artery disease (CAD) and to provide reference and basis for building up relevant expert system in the future.

**Methods:** The study sample was drawn from all cases of cardio-angiography between 1\(^{st}\) January 1993 and 31\(^{st}\) March 1994 in the cardiac internal medicine of Tri-Service General Hospital (TSGH). The sample was excluded those cases with AMI (Acute Myocardial Infarction) or DCM (Dilated Cardio-Myopathy) and total sample size was 409 cases. The researchers reviewed their medical records and extracted those data into medical history analysis forms, total valid samples were 364 cases, and the recover rate was 90%. The researchers analyzed related CAD risk factors with the half extracted sample randomly, and calculated sensitivity and specificity of each or combined interactive risk factors for CAD, then built up the rules of this knowledge base founded upon these results.

**Results:** This research verified two knowledge bases, the TSGH base and the PROCAM base, of this expert system with the other half sample. The result displayed the correct rate of the TSGH base was about 70%, and the variation of its correct rate was more stable than the PROCAM base. Even the correct rate of the PROCAM base was also 70%.

**Conclusions:** The method of establishing the expert system prototype in this research can provide reference for developing the relevant expert system, and also verify the suitability that those results of some studies are transplanted for using in other population.