

Investigation on the relationship between cholesterol and blood glucose levels using decision tree method in healthy subjects

Fazil, QAAA (Fazil, Qurratu Aini Aishah Ahmad); Jamaludin, UK (Jamaludin, Ummu Kulthum)
Univ Malaysia Pahang Pekan, Fac Mech Engn, Pahang, Malaysia.

ABSTRACT

Obesity is known as a main cause of diabetes and cardiovascular disease. However, the relationship between blood glucose and cholesterol levels among the obese subjects who are diagnosed as pre-diabetic is indistinct and still undergoing. Thus, this study is mainly focused on finding the linkage between blood glucose and cholesterol levels in the pre-diabetic subjects as to explain the cause of diabetes and cardiovascular. 90 subjects (42 male and 48 female; age between 22-58 years old) were recruited in Universiti Malaysia Pahang to undergo oral glucose tolerance test which typically being used to diagnose pre-diabetes and diabetes. The blood test results indicate the glucose level and lipid profile (i.e. the cholesterol levels) of the subjects. Results obtained from pathology lab were analyzed using decision tree to show the difference of blood glucose and cholesterol levels along with their age, systolic blood pressure and body mass index. Overall, older people, high systolic blood pressure, cholesterol and BMI levels have higher probability to be detected as pre-diabetic. Thus, further analyses need to be conducted to prevail the relationship of diabetes and cardiovascular disease among aging and obese subjects.

KEYWORDS:

artificial intelligent; blood glucose level; cholesterol level; diabetes mellitus