Abstract

In this article we evaluate the sensitivity of the risk factors of ocular hypertension progression in primary open angle glaucoma in order to distinguish between the three risk levels based on prediction classification models. The prediction classification models were trained and testing by using the most common risk factors from examination of 398 Egyptian patients. Standard classification trees as well as bagged classification were used. We classify the risk level into three risk levels which are high, middle and low based on the combination of the structural and functional risk factors. The classification outcomes of the trees were compared and we measured the sensitivity of each risk factor. The bagged classification has the best accuracy.
which is 87.7% for training datasets and 72.2% for testing datasets with area under the receiver operating characteristics curve (AUROC) 0.925 while decision tree gave 80% for training datasets and 68.7% for testing datasets with AUROC 0.868. The central cornea thickness (CCT) gave the best with average AUROC 0.946. Bagged classification tree promises to be a new and efficient approach for glaucoma classification. The CCT is very important risk factor due to its classification sensitivity.

References

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Sensitivity of the Risk Factors for the Progression of Ocular Hypertension to Primary Open Angle Glaucoma


Index Terms

Computer Science  Bio-medical Sciences
Keywords
Glaucoma  Ocular hypertension  Primary open angle glaucoma  risk factors