

# CHAPTER VI

## 6. CONCLUSIONS AND RECOMMENDATIONS

### 6.1 Conclusions

We have performed the first population-based study of normal healthy subjects for optic disc topography in Thai population at Ubolrat District, Khon Kaen Province. Thai-specific descriptive information of topographic optic nerve parameters has been elaborated. The distributions, means and 95% confidence intervals and percentiles of each of the 12 topographic optic nerve parameters (HRT parameters) were described. The 95% reference intervals (normal range) of the 12 HRT parameters had been computed using both distribution-dependent and distribution-free (percentile) methods. We recommended to use the distribution-dependent technique for data with normal distribution and small skewness. For data, which were not normal and very skew, the distribution-free method was more appropriate.

Most of the topographic optic nerve parameters were independent of age. Relationships of age to some of the topographic optic nerve parameters were very weak and were not meaningful clinically. The categorization of the topographic optic nerve parameters into age groups was not necessary.

We found a significant difference of the measurements of the topographic optic disc parameters (disc size, rim area and rim volume) between our data and previously reported data from other ethnic groups including Asians, Whites, Blacks and Hispanics. The differences also were found when compared with Asian subjects. The data from our study had the smallest disc size, rim area and rim volume. The normal data from Asians or other ethnic groups can not be generalized to Thai population. Ethnic-specific normative data of topographic measurements of the optic disc are needed to improve the diagnosis of glaucoma.

### 6.2 Recommendations

Further study with larger number of subjects and cover more areas in other part of the country will give more coverage of the data especially in the tails of the distribution. This will result in more precise and accurate reference interval (normal range). With a larger scale study, the generalizability can be done with more confidence.

The normal range or 95% reference intervals proposed in this study can be viewed only as a statistical criteria in contrast to the prognostic or treatment criteria which can be done by study both normal subjects and glaucoma patients and finding the cut-off points for the appropriate criteria.

Among Asian population there may be several distinct subgroups that have significant difference optic disc topography. A specific normative data for each of these subgroups need to be established to have more accurate classification of the optic disc. A study to compare sensitivity and specificity in glaucoma diagnosis by using Thai-specific normal data obtained from this study and the current normal data in the HRT instrument will confirm this hypothesis.