DYNAMIC PUPILLOMETRY IN A COHORT OF INDIVIDUALS WITH TYPE II DIABETES MELLITUS AND TO ESTABLISH A CORRELATION BETWEEN PUPILLARY DYSFUNCTION AND THE SEVERITY OF DIABETIC RETINOPATHY

Purpose: 1. To establish if there is a correlation between pupillary dysfunction and the severity of diabetic retinopathy.

2. To determine if pupillometry can be used as a quick non-invasive tool to screen for diabetic retinopathy.

Methods: Adults aged 45-80 years with type II Diabetes and age matched controls were recruited from Dunedin Hospital Eye Department and general public respectively. Dynamic pupillometry was performed in all the participants. We recorded the reflex amplitude, average constriction velocity, average dilation velocity, constriction latency and T75 (time to reach 75% of initial resting diameter during pupil dilation). These variables were compared across six sub groups: No diabetic retinopathy (DR) – n = 26; mild (n=34); moderate (n=18); and severe (n=11) non-proliferative diabetic retinopathy (NPDR); proliferative diabetic retinopathy (PDR) – n = 34; and the control group (31); using one-way analysis of variance (ANOVA).

Results: One hundred and twenty three patients and 31 controls have been recruited thus far. We found significant differences between the groups with mild or no diabetic retinopathy changes and those with severe NPDR and PDR with regard to indices of parasympathetic pupillary function i.e. average constriction velocity (p

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