Summary and Conclusion

This work aimed at studying the most probable medical risk factors that may affect development of diabetic retinopathy (DR) in the main classes of diabetic patients; the insulin - dependent diabetes mellitus (IDDM) and the non-insulin dependent diabetes mellitus (NIDDM) patients.

The study included 90 patients who were divided into 3 groups:

Group I; of 30 IDDM patients will DR, either of background (BDR) type or proliferative (PDR) type.

Group II; of 40 NIDDM patients with DR; also either of BDR, preproliferative (PPDR); or PDR types.

Control group of 10 IDDM patients and 10 NIDDM patients without DR, or with minimal changes in the retina, as almost always all diabetics would show some changes after 10 years of diabetic state.

By analysing the history, clinical examination data, and biochemical immunologic & genetic investigations for all these patients, the following observations were found:

(1) Sex of the patient was found to be importance as a risk factor for DR being male predominance in IDDM group and female predominance in NIDDM group.

(2) Age at examination of the patients was found to be of high significance in both groups; IDDM and NIDDM. But this significance was due to comparing IDDM group with

NIDDM group or control group both types.

(3) Duration of diabetes was an important risk factor for IDDM patients developing retinopathy, but it was not a risk for NIDDM patients.

(4) Age at onset of diabetes was shown to affect development of DR whether in IDDM or NIDDM group.

(5) Systolic blood pressure was very important factor for the PDR type of IDDM group. for NIDDM group; it was of importance in both types (BDR & PDR).

Diastolic blood pressure was not found to be of importance except for the PDR type of IDDM group; where it was very important.

So, hypertension could be considered as an effective risk factor for the PDR type of IDDM patients, but for NIDDM patients, only systolic hypertension could be considered effective.

(6) Proteinuria as a factor for determining associated nephropathy was significant in this study, on the contrary to creatinine measurement. As a risk for developing retinopathy, fallow-up proteinuria is supposed to be much informative, a measure that was not offered in this work.

(7) Regards glycemic control, poor control was clearly associated with development of retinopathy in this study, but it was not a factor determining severity. Also, treatment

was found to be important factor inducing retinopathy.

(8) Total cholesterol and triglycerides could be considered as risk factors affecting development of PDR, but HDL^{-}&LDL^{-} cholesterol were not considered to be the same. Also, total lipids were found to add some risk for developing retinopathy.

(9) Circulating immune complexes (CICs) were found to be higher in diabetic patients with retinopathy than without it. It was also found higher in IDDM group than NIDDM group. CICs were thus suggested to be of importance as risk factor for retinopathy in this study.

(10) HLA typing showed that for IDDM group; increased frequencies of A_{28}, B_8 & DR_3 was found with decreased frequencies of A_1, A_2, B_7, B_{15} & DR_4. For NIDDM group; A_1, B_{12}, BW_{21} & BW_6 were found to exist in increasing frequencies.

All these findings could have been suggest the factors which when found in diabetic patient would induce retinopathy. Still, many diabetics when analysed could show no retinopathy inspite of existance of many of these factors in the patient. Hence, further studies regards hormonal factors that may affect developing retinopathy are suggested. Growth hormone and glucagon hormone are suggested. Also, prospective controlled trials with meticulous glycemic control and follow-up for the diabetic patient since staring are supposed to give accurate results concerning the most reliable factors that may induce or help progression of retinopathy.