Risk factors in patients with diabetic retinopathy

Ahmed Abdel-Moneim Shoaib

This work aimed at studying the most probable medical riskfactors that may affect development of diabetic retinopathy (DR) inthe main classes of diabetic patients; the insulin - dependent diabetesmellitus (IDDM) and the non-insulin dependent diabetes mellitus(NIDDM) patients.The study included 90 patients who were divided into 3 groups:!fJrnJ7¥Jjp D; of 30 IDDM patients will DR, either of background(BDR) type or proliferative (PDR) type.!fJrnJ7¥Jjp !lD; of 40 NIDDM patients with DR; also either of BDR,preproliferative (PPDR); or PDR types.((;~I1Jau-1/I)1J eNllJjp of 10 IDDM patients and 10 NIDDM patientswithout DR, or with minimal changes in theretina, as almost always all diabetics would showsome changes after 10 years of diabetic state.By analysing the history, clinical examination data, andbiochemical immunologic & genetic investigations for all thesepatients, the following observations were found:(l) Sex of the patient was found to be importance as a riskfactor for DR being male predominance in IDDM groupand female predominance in NIDDM group.(2) Age at examination of the patients was found to be of highsignificance in both groups; IDDM and NIDDM. But thissignificance was due to comparing IDDM group withSummary and ConclusionNIDDM group or control group both types.(3) Duration of diabetes was an important risk factor for IDDMpatients developing retinopathy, but it was not a risk forNIDDM patients.(4) Age at onset of diabetes was shown to affect development ofDR whether in IDDM or NIDDM group.(5) Systolic blood pressure was very important factor for thePDR type of IDDM group. for NIDDM group; it was ofimportance in both types (BDR & PDR).Diastolic blood pressure was not found to be of importanceexcept for the PDR type of IDDM group; where it was veryimportant.So, hypertension could be considered as an effective risk factorfor the PDR type of IDDM patients, but for NIDDMpatients, only systolic hypertension could be consideredeffective.(6) Proteinuria as a factor for determining associatednephropathy was significant in this study, on the contrary tocreatinine measurement. As a risk for developingretinopathy, fallow-up proteinuria is supposed to be muchinformative, a measure that was not offered in this work.(7) Regards glycemic control, poor control was clearlyassociated with development of retinopathy in this study, butit was not a factor determining severity. Also, treatmentSummary and Conclusionwas found to be important factor inducing retinopathy.(8) Total cholesterol and triglycerides could be considered asrisk factors affecting development of POR, butHOL -&LOL - cholesterol were not considered to be thesame. Also, total lipids were found to add some risk fordeveloping retinopathy.(9) Circulating immune complexes (CICs) were found to behigher in diabetic patients with retinopathy than without it.It was also found

higher in 100M group than NIOOMgroup. CICs were thus suggested to be of importance as riskfactor for retinopathy in this study.(10) HLA typing showed that for 100M group; increasedfrequencies of A28, B8 & DR3 was found with decreasedfrequencies of AI' A2, B7, B15 & DR4. For NIDDM group;AI' B12, BW21 & BW6 were found to exist in increasingfrequencies.All these findings could have been suggest the factors whichwhen found in diabetic patient would induce retinopathy. Still, manydiabetics when analysed could show no retinopathy inspite ofexistance of many of these factors in the patient. Hence, furtherstudies regards hormonal factors that may affect developingretinopathy are suggested. Growth hormone and glucagon hormoneare suggested. Also, prospective controlled trials with meticulousglycemic control and follow-up for the diabetic patient since staringare supposed to give accurate results concerning the most reliablefactors that may induce or help progression of retinopathy.