studies in the pathgenesis of glomerulonephritis

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Saprophytic and non-pathogenic streptococci are widelydistributed in nature, but -some species are pathogens forhuman being, among of which are, group A, beta hemalyticstreptococci which are common in sore throat of children.This infection is usually of short duration but it alwaysproduce delayed acute post streptococcal glomerulonephritis.Acute post-streptococcal glomerulonephritis (AGNl is a formof acute glomerular injury which is a delayed sequela ofinfection with certain nephritogenic strains of group A Bhemolyticstreptococci. Documentation of streptococcal infection(positive throat culture or elevated tit res of antibodyto certain extracellular antigens such as stryptolysin 0 isan important factor for establishing the diagnosis.The urinalysis usually reveals pr ot ei nur ia, hematuria,and the presence of red blood cell casts. Hypertension,azotemia, and aliguria are usually mild but may be severe ina small percentage of patients. AGN is generally a nonprogressivedisease in children leading to complete recovery(Baldwin et ai., 1974).Many morphological, clinical, and serological featuressuggest that acute poststreptococcal glomerulonephritis(APSGN)is an immune complex disease (Glassock e tal., 19B6).Frequently following the onset of this disease, serum C3levels are markedly depressed. Discrete deposits of IgG andC3 on the epithelial side of the GBM have been detected. Inaddition, soluble immune complexes have been detected in thecirculation of some patients with AGN (Mohammed et al., 1977;Ooi et al., 1977).Up till now, no specific genetic marker is characteristicfor post-streptococcal glomerulonephritis in Egypt. Asstriking relationship have been found between HLA-antigen andmany diseases, the present work was undertaken to look forany association between (PAGN) and certain alleles of theHLA-A,B,C and DR.The present work included 33 patients, 19 males and 14females with ~ge ranged from 4-14 years. They were taken upconsecutively from the inpatients of the Department of Pediatricsat Mansoura University Hospital.The cases were presenting clinically and laboratory asacute glomerulonephritis, post-streptococcal on the basis ofpresence and/or history of sore throat, or pyogenic skininfection, and evidence of streptococcal infection.For all members included in the study, the followingwere done:- Full detailed history._ Laboratory investigations .• Culture of skin infection and throat swabs, and serologicalgrouping of isolated streptococci by:1) Streptex test2) Bacitracin sesnitivity test.* Urine analysis_ Chemical and serological investigations.* serum creatinin, creatinin clearance serum electrolytesto evalute kidney function.* C-creactive protein and A.S.O titre.* Identification of serum (Igs), complement and CIC.* HLA tissue typing.In the present study, throat swabs were taken from 33cases of acute glomerulonephritis. Beta-hemolytic streptococciwere

identified by the presence of beta-hemolysis onblood agar plates. The number of beta-hemolytic streptococcalisolates was 7 in all 33 cases. These isolates weregrouped by streptex kits, bacetracin sensitivity disks. Thenumber of group A beta-hemolytic streptococci identified bystreptex was 7 (100%) of the isolated cases. The number ofgroup A identified by bacitracin disks was 6 out of 7 sevencases (85.7%). from the previous data, it is quite clearthat the incidence of group-A beta-hemolytic streptococcalisolates is low. The sensitivity of streptex kits in identificaitonof group A streptococci was striking, but bacitracindisks was less sensitive.The antistreptolysin 0 titre was determined by thelatex method. The mean value of antistreptolysin 0 titre washigheL in cases fLom which beta-hemolytic stLeptococci weLeisolated than in cases fLom which no beta-hemolytic stLeptococciweLe isolated. The mean value of ant i st rep t oLya Ln 0titLe was (742.86 & 384.62) Lespectively C-Leactive pLotein,was found to be positive in all cases of acute PoststLeptococcalglomeLulonephLitis.HLA antigens weLe typed by -using the micLolymphocytoxicitytissue typing technique (BoLdmeL, 1978).The HLA B8 1S the only antigen in locus B that showssignificantly higheL fLequency compaLed to contLols becauseits fLequency in the patient (42%)compa red to no rma L con t roIs (6.5%)is significantly highand P(O.OOl. Also theLelative Lisk is high and significant (RR = 10.6). FULtheLmOLethe contLibution of the antigen as measuLed by etiologicfLaction is high 0.684.Statistical analysis also Levealed that -the only significantdiffeLence of HLA-DR is that between the fLequencies ofHLA DR3. The DR3-antigen fLequency in the patients (27.3%)compaLed to that of contLol (14.9). The RR = 7.14. FULtheLmore , the test of significance of the RR (total X 2) showssignificance RR. P(O.OOl.- Assays fOL ciLculating immune complexes by lazeL nephelomet ry were positive and mo re than 1.5 mg/dL fOL everypatient which indicated antigen antibody Leaction fOLming the(222)immune complexes in all patients.The level of C3 measured by lazer nephelometry was founddecreased in 23 out of 33 cases. The means of C3 and C4levels were consequently the following, 51.838 and 32.65. C3was present with seven cases having HLA-B8 and decreased in 6out of these 7 cases while was decreased in 4 out of 6 caseshaving HLA-DR3 haplotype, and was decreased in all the sixcases having HLA B8/DR3. This indicated that there is agreat association of both C3 and HLA B8 as well as B8/DR3hawlotypes in APSGNSerum levels of IgG were below the normal level in 28out of 33 cases.IgG was decreased in seven cases out of eight, havin~HLA-B8 and with 5 out of 6 -having HLA-DR3. This indicatesthat there is a great association of the IgG and HLA B8 aswell as HLA-DR3 in APSGN._ In contast, the IgA, was decreased in only one caseout of six with B8, two cases out of six with DR3 and threecases out of six with B8 DR3. This indicated that IgA is notassociated with any genetic factor in APSGN. -Also there is insignificant correlation between theleve Ls of IgM and HLA haplotypes, however the mean of IgM inour patient (301.3) was high than that of control (164.2).