The impact of hodgkins disease on the immune system

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Sixty children below the age of 14 years with confirmeddiagnosis of H.D both clinically and laboratory were studied.They presented at the Pediatric Clinic of National CancerInstitute, Cairo University. They were divided into threegroups:Group 1. Twenty children with HD seen at diagnosis andbefore starting treatment.Twenty children with HD under treatment.Twenty children Studied in complete remission andafter ending therapy.Group 4. Twenty children were healthy control.Lymphadenopathy was the most prominent clinical findingin 88.4%. It was more prevalent in the cervical group oflymph nodes (68.33%). B-symptoms was present in 40% of allpatients. The height was severely reduced in patients underrelapse therapy compared to the control. The percentile ofheight was significantly decreased in all studied groupcompared to the controls. The mean percentile of weight wassignificantly diminished in all studied groups compared tocontrols. This decrease was more apparent in relapsedpatients. Hepatomegaly was found in 26.66% with a mean sizeof 1.275±1.832cm with a maximum of Scm below the costalGroup 2.Group 3.margin. It was decreased by treatment, However this decreasedid not reach significance. Splenomegaly was found in 20% atpresentation while only one case showed splenomegaly atsample due to splenectomy. Combined therapy reduced theenlarged lymph nodes significantly from a mean 4.3±2.623cm atpresentation to 1.25±1.034cm at sample. Infectiouscomplication of therapy including viral, fungal, bacterialinfections was present in 15%, 15%, 55% respectively.Anergy to tuberculin skin test was present in 15/20(75%) of pretreatment children, 9/10 (90%) and 10/10 (100%)of relapsing children 70% in remission group. This highfrequency of anergy was statistically significant compared tocontrols. The Anergy was present in 7/8 (87.5%) of patientsin stage III & IV and 7/12 (58.3%) in stage I & II .. Thishigher percentage in stage III & IV does not reachstatistical significance. The mean indurated area totuberculin test was significantly reduced in all patientscompared to controls.The mean Hemoglobin percent was significantly decreasedin pretreatment and relapsing compared to controls patientsrevealing hypochromic microcytic anaemia in those children.Leukopenia was· found in all patients compared to controls.It was more severe in patients under treatment. Relativelymphocytopenia was found in 13/60 (21.6%) while relativelymphocytosis in 20/60 (20%). The lymphocytopenia wasstatistically significant in relation to controls. Relativeeosinophilia was present in patients before treatment, inrelapse and in remission group. It was

statisticallysignificant. Significant monocytosis was found in the samegroups of eosinophilia. Absolute lymphocytopenia wassignificant in all studied groups compared to controls. Itwas more prevalent in patients during treatment.The E-R active (T-cell) was significantly reduced in allstudied groups compared with the control group. At diagnosis.the mean ER was significantly reduced in relation tocontrols, but it was significantly higher than patients undertreatment. It also was significantly lower than in remissiongroup. The reduction in E-R active in relapsed patients wasthe worst of all groups in relation to controls.132The mean percentage of lymphoblastic transformation inresponse to PHA was statistical significantly reduced inrelation to control this reduction was prevalent in relapsedgroups than other groups. It was also more prevalent inpatient with advanced disease (stage III and IV) than inpatients with early disease (stage I & I). The Mean E-A(B-cell) active percentage was normal in untreated patientscompared to controls. It was severely depressed in relapsingpatients due to repeated therapy. The mean E-A active waslittle higher in untreated children compared to patientsunder treatment wherease, it was nearly the same as remissionlevel.The absolute B-cells count (active) was significantlyreduced in all studied children with HD compared to controls.The reduction of the absolute B-cell count was more prevalentin children under treatment.Serum alkaline phosphatase was significantly elevated inall patients studied in relation to the controls. Relapsegroup showed the highest level compared to the controls. SGPTwas significantly elevated in all groups studied compared tothe controls. It was strikingly elevated in patients duringtreatment.The mean ESR showed a significant elevation in allgroups of HD during the first & Second hours in relation tocontrols. The untreated children had the highest ESR comparedto the controls.In conclusion HD causes reduced cellular immunity in -allaffected children manifested by anergy to tUberculoproteinskin test, diminished T Cell functions (decreased E-R anddecreased lymphoblastic transformation in response PHA) inthe different phases of H.D; at diagnosis, during treatment,in relapse and in remission with preserved B-cell functions.Therapy causes further impairment of the cellular immunedefects. All deficient functions of T-cells persisted duringremission except the delayed skin reactivity which showsimprovement.