MECHANICAL HEMOLYSIS IN PATIENTS WITH CARDIC VALVE PROSTHESIS

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Valve prothosis of differnt construction may have differnt traumatic effect in the red blood cells. The hemolytic effect may be changed considerably even by modification of the same valve. The hemolysis may be sufficient to produce clinical hemolytic uncinia ormay cause a compensated hemolytic state.Significant hemolytic anemia may be an important determinant of prognosis. in some cases, it may be a sign of leakage around the valve of Ball variance demanding surgical intervention. The turbulence of blood and direct contact between red cells and solid surfaces are the most important causes. The purpose of the present work is to evaluate the hemolytic effect of prosthetic materials and designs and to study the influence of a single and double valve replacement on hemolytic process. The study consisted of 39 patients following prosthetic heart valves implantation. They were investigated for:-Hemoglobin concentration, Hematocreat value, reticulocyte count osmotic fragility test, serum LDH and serum haptoglobin. Patients were divided into three groups:- guoup I consisted of 14 patients with valvular heart replactnent with tilting Disc valves of Bjork - Shiley or omniscience varieties.Group II consisted of 10 patient with valvular heart replacement by Ball valve of the Starr-Edwards variety. Group IIIincluded 15 patients with valvular heart replacement by ball andtilting disc valves. Another group (group IV) represented the control group and consisted of 10 normal healthy persons. The incidance of hemolysis compensated and uncompensatid regardless of the type and site of valve replacment was 68%. It is 28% for group I, 16% for group II and 24% for group III.Hemoglabin level and hematocrit values were below normal in 56% and 68% of cases respictively. The mean value of Reticulocyte count in group I, II and III were significantly increased from the control group $P < 0.05$ in all].In 6 cases (15%) of cases the serum haptoglobin was completly absent. i,e, Zero. There was highly significant decrease of mean haptoglobin level of group I, II and III in comparison to the contral group. Serum LDH was at high level above the normal in all cases comparison of mean level of LDH between differnt groups studied were not significant but, whom they were compared with the control group a highly statistically significant inerease of LDH level was observed (P