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Author: M. B. Williamson, L. DiLallo, H. B. Haley; Depts. of Biochemistry and Surgery, Loyola University, Chicago

SERUM LIPOPROTEIND IN WOUND REGENRATION

After rats had been injured, a change in serum proteins appeared, specifically in the globulin fraction [1-4]. The change is characterized by a rise in alpha-globulin with a simultaneous decrease in gamma globulin [1,3]. During regenration of the wound, large amounts of fatty material appear in the regeneration tissue. [5,6]. The deposition of lipids points to a change of metabolism in the organism. We investigated whether a charge of fat metabolism is reflected by a change in serum lipoprotein level during the regeneration of the wound.

Adult female rats were fed a diet not including any protein for 3 days prior to and during the entire test. After three days, they received a circular wound, dia. 4 cm, on the back proximate to and at the level of the scapulae, under sodium-pentobarbital anesthesia [1,2]. The control group was treated in the same way but were not injured. Blood specimens were taken from a tail vein. Serum from 3 animals was combined for each analysis. Four combined serum specimens [each] were taken from the injured and the non-injured animals 2 days prior to and on the third and sixth day after inflicting the wound. The serum was stained for lipoproteins with Sudan black (as specified by McDonald and Ribiero; 7) and subjected to electrophoretic fractioning on cellulose-acetate strips. The latter were then dried at room temperature and the relative concentration of protein-bound lipid

[1,2]

determined (570 mμ) with the densitometer. The same strips were subsequently stained with azocarmine B in order to determine that fraction of the globulin which is correlated to the fat. At the same time at which the serum stained with Sudan black was fractioned, equal parts of the non-stained serum were subjected to electrophoretic fractioning on cellulose-acetate strips. These strips were then stained with azocarmine B and the amount of protein in each fraction determined by a method desccribed earlier [1]. The relative distribution of serum protein among the different fractions was the same as already reported earlier. [1,2].

Protein-bound Lipids in the Serum of Injured Animals

Days before and/or after injury (a)	Injured Animals		Control Group	
	Lipids (b)	Globulin (c)	Lipids (b)	Globulin (c)
		alpha-Globulin		
2	32.4	22.3	32.4	22.1
3	35.2	21.7	34.2	21.2
6	30.1	20.5	30.4	18.2
		beta-Globulin		
2	67.6	44.0	67.6	44.9
3	64.8	40.9	65.8	41.4
6	70.0	43.0	69.6	43.6

a) Before and/or after injury; b) Total protein-bound lipids in %;

c) Protein, % total globulin

It will be seen from the table that lipids correlated to alpha- and/or beta-Globulin show no change of relative amount 3 and 6 days after injury. The mass of the lipids is correlated to the first and second globulin fraction and with both beta-globulin fractions of the serum protein. It would appear that the ratio of lipid to protein under goes no change after injury. The pro-

tein fractions also remain unchanged during regeneration of the injured tissues. ( )←

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