

The following acute myocardial infarction would appear to be primarily due to release of enzyme from necrotic cardiac muscle(6). The failure of significant elevation of SGP-T is probably due to the relatively small and therefore inconsequential amount of glutamic pyruvic transaminase escaping from damaged heart cells which when diluted in the extracellular compartment would fail appreciably to increase the SGP-T.

Summary. The measurement of SGP-T alterations has been found to be a useful tool in the diagnosis and study of acute hepatic disease and appears to be more sensitive than SGO-T in depicting acute hepatocellular damage. SGP-T unlike SGO-T has the added advantage of not being appreciably altered

by acute cardiac necrosis. These preliminary conclusions require further study for confirmation.

1. LaDue, J. S., Wróblewski, F., and Karmen, A., *Science*, 1954, v120, 497.
2. Wróblewski, F., and LaDue, J. S., *Ann. Int. Med.*, 1955, v43, 345.
3. Karmen, A., Wróblewski, F., and LaDue, J. S., *J. Clin. Inv.*, 1955, v34, 126.
4. Friend, C., Wróblewski, F., and LaDue, J. S., *J. Exp. Med.*, 1955, v102, 669.
5. Molander, D., Wróblewski, F., and LaDue, J. S., *J. Clin. and Lab. Med.*, 1955, v46, 831.
6. Nydick, I., Wróblewski, F., and LaDue, J. S., *Circulation*, 1955, v12, 161.

Received March 5, 1956. P.S.E.B.M., 1956, v91.

Vitamin A Content of the Livers of Suckling Pigs.* (22331)

C. H. LIU, D. L. FRAPE, G. C. ASHTON, AND D. V. CATRON.

Iowa Agricultural Experiment Station, Ames.

The liver of the normal newly born rat was reported by Guerrant(1) to contain very little vit. A but that the concentration more than doubled during the first week of post-natal life and then remained at a relatively constant level during the remainder of the nursing period. Braude *et al.*(2) reported liver vit. A reserves to be low in the pig at birth with the amount still decreasing during suckling if the sows were fed a vit. A deficient ration.

This paper reports the levels of vit. A

found in the livers of pigs which suckled their dams for varying lengths of time.

Methods. This investigation was conducted in the summer. Thirty-five baby pigs from 6 cross-bred litters were used. One pig from each litter was sacrificed at weekly intervals until the litter was exhausted, the first group of 6 being sacrificed before they were 24 hours old. The mothers of the pigs were fed well-fortified rations containing sun-cured alfalfa hay throughout gestation and lactation. The pigs' only feed was the milk of their dam.

TABLE I. Average Vitamin A Content of Livers of Suckling Pigs.

Age at sacrifice, days	No. of pigs	Body wt, lb	Liver wt, g	Liver fat, %	Liver vit. A	
					Per g (fresh), μ g	Total, μ g
1	6	3.2 $\pm$.5*	38 $\pm$ 7.9	3.4 $\pm$.4	15.1 $\pm$ 2.6	570 $\pm$ 152
7	6	5.5 $\pm$.9	76 $\pm$ 7.5	3.3 $\pm$.5	30.6 $\pm$ 9.3	2281 $\pm$ 456
14	6	8.0 $\pm$ 1.9	104 $\pm$ 27.7	3.3 $\pm$.5	26.4 $\pm$ 5.7	2689 $\pm$ 528
21	5	10.2 $\pm$.6	135 $\pm$ 19.7	3.6 $\pm$.6	24.4 $\pm$ 9.0	3184 $\pm$ 640
28	5	13.8 $\pm$ 3.9	179 $\pm$ 45.5	3.6 $\pm$.4	21.7 $\pm$ 5.5	3889 $\pm$ 1622
35	5	18.5 $\pm$ 2.8	235 $\pm$ 49.4	3.3 $\pm$.3	19.3 $\pm$ 3.4	4539 $\pm$ 975
42	2	16.9 $\pm$ 1.2	—	3.8 $\pm$.8	17.4 $\pm$ 2.0	—

* Stand. dev. of single observation.

* Journal paper No. J-2891 of the Iowa Agric. Exp. Station, Ames, Iowa. Project No. 959.

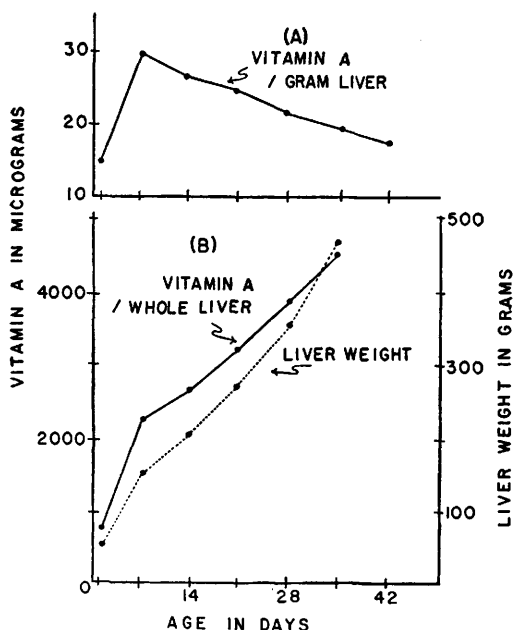


FIG. 1. Average vit. A contents in liver of suckling pigs.

The sows were fed separately from their litters and solid food was never found in the stomachs of the sacrificed pigs. The number of livers tested at each age is shown in Table I. Livers were weighed and frozen immediately after sacrifice of the pigs. Fat was extracted with ether. Vit. A was determined by the method of Gallup and Hoefer(3).

Results. Summaries of body weights, liver weights, percent fat in liver and liver vit. A according to age of pigs are presented in Table I. At one day of age, the concentration of vit. A was 15.1 μg per g of liver, while the hepatic stores for the grown-up pigs, as determined in the same season, was several times higher. The relatively low reserve of

this vitamin in the liver at birth agrees well with other species(4). By the 7th day this low reserve of vit. A was doubled per unit weight and increased 4 times (570 to 2881 μg) for the whole liver while the average liver weight increased from 38 to 76 g. This increase in vit. A in the pig seems to be accounted for by the finding of Braude *et al.* (5) that sow colostrum is richer than normal milk in this vitamin.

After reaching a peak at 7 days, the concentration of vit. A in the liver decreased gradually and uniformly from about 31 to 19 μg per g of liver at 35 days after parturition (Fig. 1A). The livers grew in size with age, however, so that the total liver vit. A made a relatively steady increase from birth until the pigs were 35 days old reaching a maximum of about 4500 μg (Fig. 1B).

Summary. Livers of 35 pigs from 6 different litters were examined for vit. A content. The liver vit. A concentration increased from 15 μg at 1 day to 31 μg per g at 7 days after parturition. The average total liver vit. A increased rather uniformly from 570 μg at birth to 4539 μg at 35 days after birth.

1. Guerrant, N. B., *J. Nutrition*, 1949, v37, 37.
2. Braude, R., Foot, A. S., Henry, K. M., Kon, S. K., Thompson, S. Y., and Mead, T. H., *Biochem. J.*, 1941, v35, 693.
3. Gallup, W. D., and Hoefer, J. A., *Anal. Ed. Ind. Eng. Chem.*, 1946, v18, 288.
4. Thomas, J. W., Loosli, J. K., and Willman, J. P., *J. Animal Sci.*, 1947, v6, 141.
5. Braude, R., Coates, M. E., Henry, K. M., Kon, S. K., Rowland, S. J., Thompson, S. Y., and Walker, D. M., *Brit. J. Nutrition*, 1947, v1, 64.

Received March 6, 1956. P.S.E.B.M., 1956, v91.