

determined by biopsy, laparoscopy, and necropsy in LC and hepatom. 2) Methods: LIBC was measured by the method of ⁵⁹Fe IROSORB. Serum iron level was measured by the method of Schweizerhall. TIBC was calculated by mathematical addition of LIBC and serum iron level. All measurements were performed on the early morning at fasting stage. 3) Results: a) Values of TIBC and LIBC: In group 1, 2 & 6, TIBC was 60.2 to 526 μ g/dl, and LIBC was 0 to 430 μ g/dl. In group 5, TIBC was 120 to 400 μ g/dl, and LIBC was 40 to 325 μ g/dl. In group 4 & 7, TIBC was 208 to 496 μ g/dl, and LIBC was 0 to 265.1 μ g/dl. b) Relationship between TIBC and LIBC: LIBC was plotted against TIBC. There was positive correlation between them in group 1, 2, and 5, although all the cases which indicated small values of TIBC did not always have small values of LIBC. In group 4 & 7, TIBC gave various values, when LIBC gave small values. c) The patients of the liver diseases were divided into group A and B according to the following criteria. In group A, TIBC is below or equal to 200 μ g/dl and LIBC is below or equal to 100 μ g/dl. In group B, TIBC is higher than 200 μ g/dl and LIBC is higher than 100 μ g/dl. The numbers of cases in group A were 13 among 39 in group 1, 2 & 6, 0 among 22 in group 4 & 7, and 3 among 23 in group 5. The numbers of cases which belonged to group B, were 15 among 39 in group 1, 2 & 6, 12 among 22 in group 4 & 7, and 17 among 23 in group 5. c) of the case.

In LC (group 1, 2 & 6) 9 cases of 13 cases belonging to group A died of coma, and varices bleeding, while only 2 cases of 15 cases belonging to group B died of coma and varices bleeding. d) Progressive changes of TIBC and LIBC in LC: In 3 cases of LC, TIBC and LIBC decreased gradually on the course and then TIBC indicated extremely small values, while LIBC fell even to 0, when they died of coma. TIBC indicated extremely small values and LIBC became 0, when 3 other patients were admitted complaining of coma, but TIBC and LIBC increased gradually and returned to normal values according to the recovery from coma and improvement in their condition. In one case TIBC and LIBC resulted in a marked increase after varices bleeding and gradually returned to normal values by therapy. 4) Discussion and conclusion: Transferrin is synthesized in the liver. The damages of the liver, especially as found in LC, result in decrease of synthesis of transferrin causing low transferrin level (TIBC) in blood. In the severe cases of LC, ability of transferrin synthesis is extremely small resulted in a marked small values of TIBC. But in the cases which have still considerable ability of synthesis, TIBC and LIBC are able to return to normal values by therapy, although these values indicate marked decrease during coma. Therefore, it is thought that a marked decrease of TIBC and LIBC in LC, when it is consistent, shows poor prognosis

Hemodynamics of Liver Circulation after Birth —Experimental Survey of Intrahepatic Shunt in the Newborn Lamb Using ¹³¹I-MAA—

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Our previous studies on the hemodynamic changes after birth gave the results suggesting the presence of physiological shunts in

the liver in early neonatal period.

In the present study 16 experiments were performed on 12 newborn lambs of natural

birth at term and one adult ewe in order to confirm the presence of intrahepatic shunts.

A catheter was placed in the branch of portal vein in the liver via the umbilical vein or the mesenteric vein in order to avoid the flow through the ductus venosus, and 17.5–100 μ c of ^{131}I -MAA was injected via the catheter.

The animal was laid on its left side and the accumulation curve into the liver and lungs were obtained by the scintillation detectors over the liver and lung. Subsequently scintiscannings over the chest and abdomen

were performed by dot scanning, photoscanning and scinticamera.

Accumulation curves revealed the accumulation of ^{131}I -MAA in the lung in 4 out of 5 cases within 24 hours after birth, in 2 out of 3 cases at one week of age and in none of 7 cases after 2 weeks at life.

The results by the both methods were in good accordance.

It was concluded that the intrahepatic shunts of larger than pulmonary capillary in diameter were present physiologically in the newborn lamb of less than one week of age.

Hepatic Blood Flow after Deviding of Arteria Hepatica Communis

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Recently deviding of arteria coeliaca and of arteria hepatica communis except arteria duodenalis has been performed in our hospital as a method of radical operation for stomach cancer (Applby's method). After this procedure the blood flow to the liver should be altered and arteria gastroduodenalis from arteria mesentericae superior, arteria gastroduodenalis from arteria coeliaca and arteria hepatica propria supply blood for the liver. Alterations of the liver function and blood flow in the liver of the patients after this operation were observed.

In the most of the cases, the values of S-GOT and S-GPT increased rapidly after the operation. The maximum values were observed one or two days after the operation. Then, the values decreased gradually and returned to normal level within two or three weeks

after the operation. Liver scanning using ^{131}I rose bengal and ^{198}Au was performed. Generally, thin scintigram of the left leaf of the liver suggesting decrease of blood supply to this region was observed in the early period between three days and seven days after the operation. In the following period, the scintigram of the left leaf increased its density, and in the most of the cases, the liver scintigram became normal within ten weeks after the operation. In a couple of the cases, the scintigram did not show the normal density in spite of ten weeks after the operation, and suggested an alteration of blood flow of the hepatic arterias and the portal vein. We intend to follow up the further liver function and the blood flow in the liver of the patients for a long period of time after this operation.