and minimum in the antrum, (2) Gastrin tetrapeptide affects the distribution of blood flow in the stomach, thereby the warp of flow are stimulated by agents or stress, (3) The incidence of peptic ulcer are caused by the warp of blood flow in the gastric mucosa, (4) Mucosal capillaries play a quantitatively significant role in the control of gastric circulation, (5) The gastric scintigram by 131I-MAA is available for the diagnosis of stomach cancer.

Hemodynamic Studies of the Abdominal Organs by the Use of 131I-MAA and 85Kr

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1) Splenic blood flow was measured in 29 patients (5 controls and 24 patients with portal hypertension or splenomegaly) by the use of 85Kr clearance method. In 5 control cases, the average splenic flow per 100 g tissue weight (SBF100g) was 118.6±29.1 ml./min. and total splenic flow (SBFt) was 145.8±14.2 ml./min. and SBFt remained in normal range (159.5±58.7). In other patients with gross splenomegaly such as idiopathic portal hypertension (10 cases), Wilson's disease (2 cases) liver cirrhosis with splenomegaly (2 cases) and extrahepatic portal obstruction (2 cases) SBF100g were mostly remained in normal range. Consequently, SBFt in these disorders showed conspicuous increase largely in proportion to the spleen size. This increase of the splenic blood flow can not be explained by the portal congestion. And the increase of the SBFt was suggested to be a potential factor for the development of portal hypertension in these disorders. Also the enlargement of the spleen accompanied by the proportionally increased splenic blood flow suggested the proliferative process for the development of the splenomegaly in these disorders.

2) The intrasplenic injection of 131I-MAA and following scintiscanning of the liver and lungs (shunt scintigram) permit the semi-quantitative evaluation of the shunt ratio of the splenoportal system. By this method, 50% of shunt ratio in average in 29 patients with liver cirrhosis, and 28% of shunt ratio in 10 patient with idiopathic portal hypertension were found. Consequently, the portal flow of idiopathic portal hypertension is considered to be increased, although it was previously reported to be decreased by the intrahepatic portal obstruction.

3) The perfusion scintiscanning by the intravascular introduction of 131I-MAA, provides useful informations concerning the circulatory pattern of the liver in hepatic neoplasm. Malignant liver tumor (primary or metastatic) has been shown to be predominantly perfused by the hepatic artery resulting in the formation of regional separation of blood flow partition of the two afferent vessels into the liver.

4) Intra celiac arterial introduction of 131I-MAA is useful for the diagnosis of the arterial systemic venous communications in various disorders. One case with liver cirrhosis and hepatoma and another case with stomach varices of unknown origin showed the accumulation of radioactivity in the lungs indicating the presence of arterial portal and portal systemic venous shunts, which was confirmed later by autopsy and operation.