

mellitus.

One patient with renal failure was subjected to blood dialysis and another one was subjected to peritoneal lavage. Turnover study was carried out prior to and during these operations. By these operations only 3% of radioactivity was removed in dialized fluid and 6% was contained in peritoneal fluid.

The blood level of two and six hours after injection were compared especially. These levels of diabetic group lie between those of renal failure and those of control groups.

The delayed decrease of the levels of this group was examined. It had no corellation to the level of fasting blood sugar, the amount of urinary sugar and the use of drugs just before this study. In contrast to this the blood level, particularly two hours after injection, closely correlated to the results of PSP test and GRF ($r=0.79$ for PSP 15 min.; $r=0.74$ for PSP 2 hours; and $r=0.82$ for GFR). The blood level of digoxin in diabetes mellitus directly reflects the degree of impaired renal functions.

**The Effect of Vitamin E on the Pregnants Rats
(Especially Using ¹⁴C- α -Tocopherol)**

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(Puropse) Following administration of ¹⁴C-2-towpherol (abbreviated, ¹⁴C-V.E.) to pregnant rats, incorporation of ¹⁴C-V.E. into placentas and fetuses were observed and were studied to solve the effect of V.E treated with progesterone (abbreviated, P) and to clarify the significance of V.E in abortion cases.

(Experimental materials and methods)

Pregnant rats of Wistar strain were divided into following seven groups. Steroids and V.E were administered from the 11th day to the 19th day of gestation. Group A: Control, without treatment. Group B: P (1,0 mg) administered. Group C: P (1 mg) and E (20 mg) administered. Group D: Testo-

sterone propionate (0.5 mg, abbreviated, T.P) and P (5 mg) administered. Group F: P (5.0 mg) administered, after castration on the 11th day of gestation. Group G: P (5 mg) and E (20 mg) administered, after castration.

Following administration of ¹⁴C-V.E the rats of seven groups were sacrificed after 24 hours, visceras were all excised and weighed. Particularly the macroscopical findings of placentas and fetuses were observed. By Emmerie-Engel's procedure V.E was extracted and ¹⁴C-V.E contents were counted by liquid scintilation counter.

(Results)

	Weights of Placentas (mg)	Weights of fetuses (mg)	Incorporation of C-V.E into placenta C.P.M/mg	A survival rate of fetuses
Group A	280 \pm 7	2690 \pm 49	4010 \pm 62	100%
Group B	304 \pm 5	3050 \pm 42	4560 \pm 45	100%
Group C	346 \pm 5	3330 \pm 38	4240 \pm 47	100%
Group D	315 \pm 9	2630 \pm 41	3840 \pm 57	55%
Group E	320 \pm 7	2760 \pm 35	3930 \pm 62	69%
Group F	288 \pm 9	2530 \pm 86	3260 \pm 66	24%
Group G	302 \pm 3	2770 \pm 38	3840 \pm 41	58%

Administration of T.P. or castration caused abortion, degeneration of placenta and death, maceration and absorption of fetuses in pregnant rats. Administration of P to the pregnant rats, however, mitigated these changes. It was impossible, however, to maintain the complete gestation by admin-

istration of V.E combined with P. Considerable amounts of ^{14}C -V.E were found to be incorporated into placentas in this experiment. Results of ^{14}C -V.E incorporation into hypophyse, liver, adrenal, kidney, ovaries, uterus and serum showed the same reported already by other workers.

Metabolism of ^3H Labeled Nitroglycol

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Little is known as to the metabolism of nitroglycol which is volatile and has been shown to be hematologically toxic. To elucidate information in this regard, tritiated nitroglycol was prepared from ^3H ethylene glycol. The procedure involved addition of carrier to the labeled ethylene glycol, dropwise mixing with nitric acid and sulfuric acid, and removal of the acids. The tritiated nitroglycol had a specific activity of approximately 5 mCi/1.3 ml, was subsequently dissolved in 40 ml of olive oil, and 0.1 ml or 0.2 ml was given subcutaneously to mice or rabbit. For the beta measurement, the dioxane-naphthalen solvent system was used to facilitate the use of aqueous materials at the sacrifice of counting efficiency due to solvent

quenching. The treatment of tissue and urine for measurement was the same as that described in #102.

Tissue concentration of ^3H was the greatest 1-3 hours after the administration and the liver contained about 9% of the dose per gram. The spleen uptake was of interest in that the peak of uptake was at 2 hours showing a tremendous concentration of 22.5% per gram, immediate to fall thereafter. This phenomenon might represent splenic uptake and sequestration of damaged erythrocytes. Tissue concentration after 24 hours was very low and urinary elimination of ^3H was quick. In rabbits, 12% of the dose was excreted in urine in 6 hours and 25% in 24 hours.

Studies on the Metabolism of Radioiodine Labeled Human Serum 7S Gammaglobulin (IgG)

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The present report is concerned with the metabolic studies of radioiodine labeled human serum 7S gammaglobulin (IgG) in human subjects.

A) IgG from pooled normal human sera were labeled ^{125}I in Abbott Laboratories or ^{131}I in Dinabot Radioisotope Laboratory. Doses of four to $100\mu\text{Ci}$ of ^{125}I - or ^{131}I -labeled-IgG were injected intravenously in 32 cases of normal subjects and patients with various

disorders.

Serum and urinary samples were collected, and their radioactivity was measured for 2 to 4 weeks long.

$\text{T}_{1/2}$ in normal subjects (8 cases) averaged 12.1 ± 1.6 days. The metabolism of IgG was accelerated in collagen diseases and nephrosis, and prolonged in hypogammaglobulinemia. Obtained $\text{T}_{1/2}$ values in various disorders were as follows: