TABLE I.
Effect of Succinate and Malate on the Duration of Barbiturate Anesthesia in Rats.

Exp. No.	Barbiturate	Nutritive state	No. of rats	Further treatment	Duration of anesthesia* min.
1	Na Pentobarbital 3.2 mg/100 g wt	Fasted 24 hrs	16	Control	28 ± 11
			16	Succinate, 50 mg/100 g I.M.†	33 ± 10
			15	Malate, 55 " " "	26 ± 7.4
2	Na Pentobarbital 3.2 mg/100 g	" 16 "	14	Control	18 ± 6.9
			14	Succinate, 50 " " "	18 ± 3.1
3	Na Iso-amyl Ethyl Barbiturate 5 mg/100 g	" 16 "	13	Control	21 ± 9.9
			13	Succinate 50 " " "	26 ± 10
4	Na Pentobarbital 3.2 mg/100 g	Well fed	3	Control	32 ± 13
			4	Succinate, 100 " " I.P.‡	69 ± 6.2
			4	Malate, 111 " " "	90 ± 4.0
5	Na Pentobarbital 6.5 mg/100 g	" "	2	Control	120
			3	Succinate, 100 " " "	165
			2	Malate, 111 " " "	187

* Mean and standard deviation of the mean.
† I.M.—Intramuscularly.
‡ I.P.—Intraperitoneally.

response with succinate. The animals had been fasted and comparatively large doses of succinate were administered.

In Experiments 4 and 5 succinate and malate were administered intraperitoneally. Although it is recognized that metabolites injected intraperitoneally are apt to be absorbed into the portal circulation and deposited in the liver before they can reach the brain, experimental conditions were arranged to have this deposition at a minimum. The animals were well fed and, in addition, large doses of the metabolites were injected. In no case did succinate shorten the duration of anesthesia. The apparent prolongation of the anesthesia by succinate and malate in experiments 4 and 5 is probably not significant because of the limited number of animals.

Summary. The intramuscular administration of sodium succinate to fasted rats under pentobarbital or amytal anesthesia did not significantly shorten the duration of the anesthesia. Similarly the intraperitoneal administration of succinate or malate to a limited number of fed rats under pentobarbital anesthesia did not significantly influence the duration of anesthesia. We were unable to confirm Soskin and Taubenhaus' observations that succinate is an effective agent in the control of barbiturate anesthesia.

14557 P

Influence of Sulfadiazine on Plasma Lipids in Pneumonia.*

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In preceding communications,[1,2] the author has presented evidence to indicate that in acute infections such as pneumonia in children, there is a definite depression of the plasma levels for total and ester cholesterol, total fatty acids and phospholipids together with a fall in the iodine numbers of the total fatty acids and the phospholipid fatty acids. Adequate treatment of the pneumonia patients with specific immune serum prevents the fall

in blood lipids.[3] Chemotherapy offers a variable response. Sulfapyridine permits a moderate drop in the lipids of the blood while sulfathiazole is more effective.[4,5]

Sulfadiazine (2-sulfanilamidopyrimidine) is considered by clinicians to be superior to sulfathiazole in the treatment of pneumonia. What is its influence on the plasma lipids? This question is answered by the observations made on 6 subjects ranging in age from 6 to 13 years. All the children were ill with pneumonia due to the pneumococcus. They were admitted to the hospital very early during their illness, and on admission 2 g of sulfadiazine were given orally. Following the initial dose, the drug was administered in 1 g doses every 6 hours 4 times per day and it was well tolerated by all the patients.

The first sample of blood was collected just before the sulfadiazine was started. At this time each child had been ill from one to 2 days, and the fever ranged between 38.4° and 40.3°C. The second sample was drawn about 24 hours after the temperature had dropped to normal. The third and fourth samples were obtained on the fourth and seventh day of convalescence respectively. The drug was discontinued on the fourth day of normal temperature just before the third sample had been collected. A thorough examination including a roentgenogram of the lungs was made each time.

Bloor's methods[6,7,8] were followed to determine the various cholesterol fractions. The

TABLE I.
Plasma Lipids of Pneumonia Before, During, and After Administration of Sulfadiazine.

Case No.	Total cholesterol				Cholesterol esters, mg per 100 cc serum				Free cholesterol			
	A	B	C	D	A	B	C	D	A	B	C	D
1	170	275	297	287	74	193	203	184	96	82	94	103
2	131	198	190	223	74	139	121	152	57	59	69	71
3	180	193	190	208	110	112	116	127	70	81	74	81
4	147	260	208	242	81	186	146	160	66	74	62	82
5	145	197	256	260	62	122	167	169	83	75	89	91
6	136	253	193	247	56	155	117	156	80	98	76	91
Avg	151	230	239	244	76	151	145	158	75	78	77	86

	Total fatty acids, mg %				Iodine No. of total fatty acids				Phospholipids, mg %				Iodine No. of phospholipid fatty acids			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
1	385	420	417	405	105	97	99	106	130	93	125	147	116	112	112	115
2	264	252	296	364	102	104	98	93	104	92	91	120	101	112	107	106
3	350	375	366	334	108	103	112	106	93	139	119	119	117	111	118	116
4	268	283	420	405	96	104	99	108	104	92	125	120	101	112	112	106
5	280	346	380	413	101	103	107	110	130	139	113	130	104	111	108	109
6	319	452	366	381	96	105	112	97	130	99	119	123	106	115	118	106
Avg	311	354	374	383	101	102	104	103	115	109	115	126	107	112	112	109

A—Blood sample collected before sulfadiazine was started.
B— " " " after 24 hours of normal temperature.
C— " " " on 4th day of convalescent period.
D— " " " on 7th day of convalescent period

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total fatty acid and phospholipid values were obtained by the microgravimetric method of Wilson and Hansen.[9,10] Yasuda's modification[11] was employed to determine the iodine absorption of the serum fatty acids.

The results are summarized in Table 1.

The physical examinations and the roentgenograms of the lungs revealed a similar infection in all the subjects. The total cholesterol and esters were significantly lower than normal on the day the sulfadiazine was started. The only exception was case 3 which was the least ill. The response to the administration of the drug was rapid. Four of the patients had a precipitous drop in the temperature to normal within 24 hours while the remaining 2 had normal temperatures at the end of 36 hours. One day later the cholesterol esters already had risen to within the normal range leading to normal total cholesterol values. The roentgenograms showed beginning resolution. Blood examinations on the fourth day of convalescence revealed that the high levels of the various cholesterol fractions were being sustained. Resolution now was complete in all cases.

The influence of an acute infection on the total fatty acids and the phospholipids is less rapid than on the total cholesterol and esters. As a result the response to sulfadiazine therapy was prompt enough to prevent any significant change. The iodine numbers of the total fatty acids and of the phospholipid fatty acids remained practically the same during the entire course of the pneumonia.

The early use of sulfadiazine tends to control the altered lipid metabolism of acute infections. Comparing this observation with those of preceding papers[3,4,5] the drug is found to be as good as specific immune serum, much better than sulfapyridine and perceptibly more effective than sulfathiazole.

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14558 P

Spontaneous Glomerulonephritis in Mice.*

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Although the clinical signs and symptoms, morphologic pathology, and the chemical alterations of the blood and body fluids are known in glomerulonephritis, investigations on etiology and pathogenesis have been retarded because experimental material has not been available. Spontaneous glomerulonephritis in animals has not been described; the disease has been induced in rats according to several investigators.[1,2,3]

When mice of the Strong NH strain developed anasarca, ascites, and hydrothorax spontaneously, and became dyspnoeic, the condition was considered worthy of detailed study. Eight edematous animals of this strain were investigated from the morphologic standpoint. The kidneys were pale, but of approximately normal size and weight. On histologic section they revealed glomeruli with alterations strikingly similar to those seen in human chronic

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