

2. The increased susceptibility of thrombocytopenic blood to heparin is a direct manifestation of the decreased number of platelets present and does not necessarily indicate the presence of a heparin-like substance.

3. One variable which may influence the

results of the "heparin tolerance test" is the number of platelets present.

4. Our results suggest that the amount of active heparin present in normal plasma is very small and at least of the order of magnitude of 0.0005 mg per ml or less.

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Effects of Electro-Convulsive Shock on Pregnancy in the Rat.*

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In an investigation of the effects of electro-convulsive shock on the maternal behavior of the white rat, Rosvold¹ found that females did not bear litters if shocked within 12 to 15 hours after copulation and once daily for 14 days thereafter. The rats received 45 milliamperes for 0.2 second through alligator clips attached to the ears. This strength of current invariably induced a complete tonic-clonic convulsion.

Gross examination at autopsy suggested that the fetuses were being resorbed. No histological study of the uteri, ovaries, or pituitaries was made in the original experiments. Accordingly a series of experiments was repeated in order to permit microscopic study of these organs under various conditions with respect to the number of shocks and the time of their administration. This preliminary report is based on the study of 24 healthy nulliparous females, about 100 days of age in which mating was observed in the evening and vaginal plugs found on the following morning. The animals were divided into 3 groups and shocked according to the following schedules:

Group I. Five animals shocked once, 12 hours after mating. Three controls mated at the same time, but not shocked.

Group II. Five animals shocked once daily for 6 days beginning 12 hours after mating. Three controls mated at the same time, but not shocked.

Group III. Five animals shocked once daily for 11 days beginning 12 hours after mating. Three controls mated at the same time, but not shocked.

All animals were sacrificed with ether on the eleventh day after copulation and the uteri, ovaries, and pituitaries removed at once and fixed in Bouin's fluid. Table I indicates the results observed at autopsy. The uteri of all the controls contained normal embryos of the 11th day of development.

In the two uteri of Group II which showed resorption of the embryos, the remnants of the implantation sites were located on the antimesometrial side of the uterus. In all of the animals of Group III the implantation sites were located on the mesometrial side of the uterus and were reduced to from 1/2 to 1/5 the size of those in the uteri of control animals.

For this preliminary study a randomly selected implantation site from each animal was sectioned serially at 10 μ and stained with hematoxylin and eosin. Sections of ovaries were stained with hematoxylin and eosin, and pituitaries with Mallory-azan.

In the uteri of the two animals of Group II in which the conceptuses were undergoing resorption, the deciduae were apparently normal and contained many giant cells, but

* Supported by a grant from the Scottish Rite Fund, administered at Stanford University by Calvin P. Stone.

¹ Rosvold, H. E., Doctoral dissertation, Stanford University, 1948.

TABLE I.
Effects of Electric Shock on Rats Autopsied on the 11th Day of Pregnancy.

Group No.	No. of animals	No. of shocks	Uterine contents	
			Normal	Resorbing
I	5	1	5	0
II	5	6	3	2
III	5	11	0	5

Control animals are not included.

appeared in a condition to be expected at 7 or 8 days of pregnancy rather than at 11 days. Some proliferation was occurring as indicated by the presence of a few mitotic figures in each section. The embryos, however, were similar in stage of development to normal embryos of the 6th day but were disintegrating. In the uteri of all animals of Group III the entire decidua was disintegrating and no embryonic tissue could be found. The uterine lining was being reconstituted so as to expel the entire necrotic mass into the lumen. The uteri of the 3 unaffected animals contained normal embryos.

The pituitaries of all of the affected animals in Group II and III showed some degranulation of the acidophils and, although no measurements were made, the basophils appeared reduced in size when compared with those of the controls. The pituitaries of the unaffected animals did not show these

changes. The ovaries of all the affected animals showed many degenerating corpora lutea and a few which were histologically normal, but smaller than those of controls. The ovaries of the unaffected animals were essentially normal.

Summary. A single electro-convulsive shock administered to 5 pregnant rats 12 hours after mating had no effect on the course of pregnancy. Of 5 rats shocked once daily for 6 days beginning 12 hours after copulation, on the eleventh day 2 showed some degranulation of pituitary acidophils, slight reduction in size of basophils, small or degenerating corpora lutea and degenerating retarded embryos in the uteri. All animals similarly shocked for 11 days, showed the same pituitary and ovarian changes, and, in addition, complete destruction of the fetuses with necrosis and sloughing of decidua into the uterine lumen.

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Effects of Acute Intermittent Anoxia Upon Urinary Volume, Specific Gravity and Chloride.

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Silvette¹ demonstrated a 300% increase in urinary volume of rats exposed to 282 mm Hg barometric pressure for 3-hour periods. Ten human subjects exposed by Armstrong²

to simulated 12,000 ft. for 4 and 7 hours in a low pressure chamber excreted 100 to 300% more urine than at sea level and the urinary specific gravity fell as low as 1.016. Pincus and Hoagland³ observed a polyuria in men exposed to reduced oxygen pressure. Burrill,

¹ Silvette, H., *Am. J. Physiol.*, 1943, **140**, 374.

² Armstrong, H. G., *Principles and Practice of Aviation Medicine*, The Williams and Wilkins Co., Baltimore, 1939, p. 284.

³ Pincus, G., and Hoagland, H., *J. Aviation Med.*, 1943, **14**, 173.