

total fatty acid and phospholipid values were obtained by the microgravimetric method of Wilson and Hansen.^{9,10} Yasuda's modification¹¹ was employed to determine the iodine absorption of the serum fatty acids.

The results are summarized in Table I.

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.

⁹ Wilson, W. R., and Hansen, A. E., *J. Biol. Chem.*, 1936, **112**, 457.

¹⁰ Hansen, A. E., *Proc. Soc. Exp. Biol. and Med.*, 1939, **40**, 376.

¹¹ Yasuda, M., *J. Biol. Chem.*, 1931-32, **94**, 401.

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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provided facilities for special staining procedures.

¹ Masugi, M., and Sato, Y., *Virch. Arch. path. Anat.*, 1934, **293**, 615.

² Arnott, W. M., Kellar, R. J., and Matthew, G. D., *Edinb. Med. J.*, 1936, **43**, 233.

³ Smadel, J. E., and Swift, H. F., *J. Exp. Med.*, 1941, **74**, 345.

glomerulonephritis⁴—hyalinized glomeruli, and glomerular closure due to endothelial proliferation. These features were elucidated by staining with azo-carmin. In some cases not all the glomeruli were involved, whereas in others the process was general enough so that the term "diffuse glomerulonephritis" was applicable. Albuminuria was evidenced by casts in the tubules, but only a small degree of tubular degenerative change was present. Contracted kidneys have not been observed.

Preliminary chemical study has confirmed the morphologic diagnosis. Albuminuria, decreased total plasma proteins (5.0 g as compared with a normal for the mouse of 6.2-6.5 g %), and hyperlipemia have been demonstrated for one typical case.

⁴ Bell, E. T., *Am. J. Path.*, 1938, **14**, 691.

The age of clinical appearance of the disease, when associated with edema, has ranged from 5 to 18 months; death ensued within 2 to 3 weeks in most cases after the development of massive edema. Glomerular pathology has been noted in animals which did not exhibit the nephrotic tendency. The incidence of the disease in untreated strain NH mice of the Minnesota stock has not been determined.[†] Further studies on the pathology of the disease in mice are being pursued; investigations on the genetic, chemical, bacteriologic, and nutritional aspects of the problem are being planned.

[†] The animals from which the Minnesota stock of the NH strain has been derived were obtained from Dr. L. C. Strong of the Yale University School of Medicine.

14559

Hormonal Influences on Chemically-Induced Tumors of the Reproductive System.

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In a recent study, Smith and associates¹ reported that a deficiency or excess of numerous hormones had, with few exceptions, little effect on the rate of development of chemically-induced tumors. In that study methylcholanthrene was introduced subcutaneously, in the present investigation the same carcinogen was placed directly into various organs of the reproductive system and attention centered upon gonadal and gonadotropic hormones as possible influencing agents.

Experimental. University of Denver strain white rats, whose spontaneous tumor incidence is practically zero, were employed. They were 3 months old at the time of carcinogen administration, those surviving were killed one year later. Small pellets of methylcholanthrene, in 20% suspension in paraffin, were introduced, under aseptic precautions, into the organ studied, the total dose per animal being

10 mg. All animals were examined carefully 3 times weekly, the date upon which a tumor of palpable size first was noted was recorded; if within a week it was apparent that the mass had increased in size (which was usually the case) the original date was accepted. If no growth ensued the site was directly inspected and a decision reached. Autopsy of the survivors at year's end revealed no tumors not previously diagnosed and the implanted carcinogen was found to have been retained in all animals which had not developed tumors.

Results. Tables I and II present the results obtained. The dosage of hormones shown is the amount given per injection. Injections were made 3 times weekly.*

¹ Smith, Donn L., Wells, J. A., and D'Amour, F. E., *Cancer Research*, 1942, **2**, 40.

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