

SPONTANEOUS ANGIOSARCOMAS OF THE LIVER IN ANIMALS

RATS-----In the rat this is an unknown entity. Dr. K.G. Snell
animals has never seen this lesion. I have in my files
records of over 10,000 rats with many different strains
and have never seen this lesion.

MICE-----In mice Angiosarcoma does spontaneously occur. This is
~~xxxxx~~ in the Haired and Hairless strain H.B. mouse. Hemangio-
endotheliomas (Angiosarcomas) were observed in 45 out of
251 in the control groups. *W 1870*
Deringer, M. K., J. of the National Cancer Institute.
Vol: 12: 437-445, Oct. 1951.
As would ~~xxx~~ be expected when (C-aminazotoluene) was
subcutaneously inoculated the incidence of angiosarcomas
increased. -----Ibid; 17: 533-538, 1956
Swiss Albino mice have a spontaneous 3% occurrence of
angiosarcoma of the liver.

EXPERIMENTAL ANGIOSARCOMAS IN ANIMALS DUE TO THOROTRAST

1936-----Capillary angiosarcomas were produced in mice by
xxxx Selbie, F., Experimental Production of Sarcoma with
~~fix~~ Thorotrast. Lancet 2: 847.
1938-----Reticulosarcomas(angiosarcomas) of the Liver was produced
by intravenous injections. Onufrio, C., Su di un caso di
Reticulosarcoma sperimentale do Thorotrast. Folia med.
24: 1245. (probably used different species)

ARSENIC EXPERIMENTAL IN ANIMALS AND ITS EFFECT ON MAN

An excellent monograph on Arsenicals, has been written by A. Furst
and will be published in the future by the World Health Organisation
working group on Evaluation of Carcinogenic Risks of Chemicals to
Man.

CHEMICALS WHICH PRODUCE ANGIOSARCOMAS OF THE LIVER IN MICE

Nitrosodimethylamine---Magee, P. H., Barnes, J.M.,. British
Journal of Cancer 10: 114, 1956.

Herrold, K. M., Journal of the National Cancer
Institute. 30: 1035, 1967. Subcut. administration
to Syrian Hamsters.

Otsuka, H. and Kuwahara, A., Gann 62:147-156, 1971.
By oral administration and subcutaneous injection
to DDD & BAL b/c strain mice.

Urethane-----~~Experiments with mice~~ DERINGER, M. K.,
Journal of the National Cancer Institute
34: 841-847, 1965 Gave intraperitoneal injections
to DBA/2eBDe strains of mice.

1,2-Dimethylhydrazine Dihydrochloride---Syrian Golden Hamsters
were given in water daily 0.156 mg. to the
female and 0.161 mg. to the male.
Angiosarcomas occurred in 89 % of the females
and 82 % in the males. The tumors were in
the livers, lungs, muscle, heart, and pancreas.
No such tumor is seen in the control.
Toth, B., Cancer Research, 32: 2818-2827, 1972.

Ethylhydrazine hydrochloride---0.0125 % was given in drinking
water and 38 % vascular tumors were produced
in Swiss Albino strain mice. Toth, B.,
Scientific Proceedings, A.A.P.B. San Fran 1974.
n, Butyl-hydrazine HCL---only lung cancer.
1-carbamyl-2-phenylhydrazine---only lung cancer.
CONTROL INCIDENCE OF ANGIOSARCOMA IN THE
SWISS ALBINO MOUSE IS 5%.

Methylhydrazine---(A rocket fuel component)-Syrian Golden Hamsters
received 0.01 % in drinking water. Angio-
Sarcoma of the liver (Malignant Histiocytoma)
(Kupffer Cell Sarcoma) was produced in 32 %
of the females and 54 % of the males.
Latency period 70 and 78 weeks,.
No such tumor was seen in the controls,

Toth, B., and Shimizu, H. Cancer Research
33: 2744-2753, 1973.

1-Substituted-2-phenylhydrazines -- in a 0.25% solution in drinking

Swiss mice. Angiosarcomas of the liver
occurred in 8 out of 72, and in the controls
4 out of 44. Toth, B. and Shimizu, H.
Journal of the National Cancer Institute.
52: 241-251, 1974.

100% of 0.5%
7 out of 8
8 out of 10
37 per cent in the 0.3%.

ARE ENVIRONMENTAL HAZARDS IN THIS GROUP?

Hydrazines are used in industry as a rocket propellant.

Monomethylhydrazines are used as corrosive agents.

Maleic hydrazide used as a herbicide hydrolyzed to hydrazines.

2- Hydroxyethylhydrazine is used to ripen pineapples and is sprayed.

Phenylhydrazine is used in medicine for polycythemia vera.

Alkyl
Spencer

NEPHROBLASTOMA

Since Professor C. Maltoni mentioned the high incidence of
nephroblastoma in rats treated with Vinyl Chloride, a brief
statement is included for the Interagency group and the
Environmental Protection Agency Task Force.

Renal Adenocarcinoma in our population has shown a rapidly
increasing incidence with age in both sexes. This is well
documented by the State of California, Alameda County, Department
of Public Health, California Tumor Registry(1960--1969)
A review on Cancer of the Kidney-Etiology, Epidemiology, and
Pathology is recently published by J.L. Bennington in Cancer
Vol 32: 1017--1029, Nov. 1973. In view of Dr. Maltoni's
experiments should not the Vinyl Chloride workers and families
be studied with this lesion in mind, AS WELL AS THE LIVER.

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April 17, 1974