

CONTAINS NO CBI

Ariline Tumors of the Bladder

Animal Work

Progress Report for 1941

Animal Studies

Over two and a half years have elapsed since a group of dogs received minimal damage to their bladders as a result of exposure to Beta Naphthylamine. Since that time they have not received additional exposure save that due to a possible cross-contamination mentioned in the 1940 Progress Report. Up until the present, there is no sign of the development of bladder tumors in any of the animals.

We have not been able to produce bladder tumors in dogs as a result of exposure to any of the following compounds:

<u>Compound</u>	<u>Period of Exposure</u>
Alpha Naphthylamine (Technical and Pure)	21 months
Benzidine	30 months
Phenyl Beta Naphthylamine	22 months
Tolidine	6 months
Ariline	8 months

Whether these compounds will eventually produce tumors cannot be stated at the present time, but it can be stated that they are much less potent than Beta Naphthylamine in this respect.

A continuation of the exposure is necessary to establish the potency of these compounds as agents in causing bladder tumors.

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Urine Studies

During 1941 the urines on a group of workmen exposed to Beta Naphthylamine have been studied at frequent intervals at the Dye Works Hospital following the procedure established at the Haskell Laboratory in 1940. Duplicate results of these examinations have been forwarded to the Laboratory and are being analysed to obtain further data on the relation between the degree of exposure to Beta Naphthylamine and its action on the bladder.

HASKELL LABORATORY OF
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Animal Work
Progress Report for 1941

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During the year the study of dogs exposed to the following compounds has been continued:

- (a) Beta Naphthylamine
- (b) Alpha Naphthylamine (Technical and Pure)
- (c) Benzidine
- (d) Phenyl Beta Naphthylamine

In addition, study on two new compounds, aniline and tolidine, was started.

The results obtained in experiments with these various compounds can be summarized as follows:

(a) Beta Naphthylamine

Three dogs given 300 mg. of Beta Naphthylamine daily by mouth between 3/9/39 and 4/28/39 (49 treatments) developed minimal irritation of the bladder as indicated by blood and excess growth promoting substances in the urine and confirmed by cystoscopy. These dogs have been under observation continuously for over 2 1/2 years without further treatment with Beta Naphthylamine and have shown no sign of developing bladder tumors. This experiment was instituted to show that, even should minimal damage to the bladder occur as a result of exposure to Beta Naphthylamine, if the individual is removed from exposure or the exposure is definitely reduced, no tumor will subsequently develop.

(b) Alpha Naphthylamine (Technical and Pure)

Five animals, two exposed to Technical Alpha Naphthylamine (containing 7-9% Beta) and the other three exposed to Pure Alpha Naphthylamine, have been given 300-320 mg. by mouth daily (5 times a week) for 21 months. On the last cystoscopy report by Dr. Wolfe (11/25/41) one dog in each group had abnormal areas of coloring in the bladder mucosa. None of the animals in either group have shown evidence of tumor formation by urinalysis or cystoscopy. Biopsies on suspicious areas in the bladders of 14 E₂ and G₂ (Alpha Technical) and 14 E₂ (Alpha Pure) on May 28, 1941 and November 25, 1941 were reported as lymphoid hyperplasia. These were unaccompanied by any changes in the bladder epithelium.

(c) Benridine

A group of four dogs has been given 100-120 mg. of benridine daily (5 times a week) since 6/25/39 without showing any evidence of bladder tumor formation.

(d) Phenyl Beta Naphthylamine

A group of three dogs has been given 540-550 mg. of Phenyl Beta Naphthylamine daily (5 times a week) since 2/28/40. No significant abnormality of the bladder has developed in any of this group.

(e) Tolidine

Three dogs have been given 250 mg. of Tolidine by mouth daily (5 times a week) since 6/19/41. Routine urinalysis, colpidium counts, and cystoscopies indicate that no irritation of the bladder has resulted.

(C) Aniline

Three dogs have been given 300 mg. of Aniline by mouth daily (5 times a week) since 5/14/41. Routine studies of the urine, colpidium counts, and cystoscopies, indicate the bladders so far have not been affected.

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