Susceptibility of Newborn Mice of Resistant Strain to Chemical Cancerogen

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Newborn mice of both sexes, 1 to 7 days old, of dd-Strain were administered 1% suspension of 20-methylcholanthrene in 25% PVP¹⁾ intraperitoneally. They were breast-fed by non-treated mother, and after weaning fed boiled whole wheat, boiled and dried baby-sardine and green vegetables. Temperature of the animal quarter was regulated between 18° and 25°C. Incidence of lung tumor among thus treated mice was very high at the age of 3 months exceeding 75%. Whereas, among the untreated controls and mice administered the identical agent or subcutaneous injection of methylcholanthrene-rosin pellet²⁾ 30 days after birth the incidence was very low and retarded, not exceeding 1% and being detected after 8 months. Numbers of animals examined so far are too small to determine exact percentages and time of onset of tumor formation at this time. Tumors observed were histologically identical in all groups; that is, benign papillary adenocarcinoma,³⁾ presumably of alveolar origin. However, a tendency was noticed in the group treated at 30 days to form a single tumor mass at the caudal pole of the inferior lobe of the right lung accompanying minute scattered lesions in the whole lung. Tumor masses in the former group were small and numerous being diffusely disseminated in the entire lung. A distinct contrast between these two groups was noticed in regard to the local tumor formation; it frequently occurred at the site of introduction of the agent in the latter group, manifesting invariably as fibrosarcoma containing multi-nucleated giant cells. While in the former group very few mice developed fibrosarcoma, some of which are probably attributable to accidental inoculation of the agent. Such difference in the mode of tumor incidence doesn't seem to explain well the enhanced susceptibility of newborn mice to methylcholanthrene. Analysis of the mechanism of lung-tumor induction by administration of chemical cancerogens to newborn mice of ordinarily resistant strain is being undertaken and will be reported elsewhere.

Reference: 1) Polyvinylpyrrolidone (Plasdone), provided by courtesy of General Aniline and Film Corporation, New York. 2) Imai, *Acta Anatomica Japonica* 1956, 31 Suppl. p. 7. 3) Cloudman, *Biology of the laboratory mouse* by the Staff of the Roscoe B. Jackson Memorial Laboratory, Dover, New York, 1941, pp. 210-212.