Occurrence of Jaundice in Inoculated Suckling Mice.* (19561)

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Laboratories engaged in studying the Coxsackie viruses commonly use many litters of suckling mice. This preliminary account notes the previously unreported appearance of jaundice in such mice following inoculation of several bacteria-free filtrates of suckling mouse carcasses. The phenomenon is apparently not due to a transmissible agent and its mechanism remains to be elucidated.

Ten percent extracts of human feces were centrifuged for 10 minutes at 2000 r.p.m. and 1000 units of penicillin G and 500 units of streptomycin per ml added. Newborn mice (Harlan albino stock) were inoculated subcutaneously with 0.03 ml each of fecal extracts. From 12 apparently negative fecal specimens successive serial "blind-passages" were employed. Three separate lines of such "blind-passages" have yielded pools of infant mouse carcasses capable of producing jaundice upon subcutaneous inoculation. These 3 separate pools of bacteria-free filtrates (Corning sintered glass UF filters used) have been studied in mouse litters only. Following the subcutaneous inoculation of 0.03 ml of icterogenic filtrate the recipients appear normal until 36 to 48 hours has elapsed. Jaundice of varying depth then appears; from the plasma of deeply jaundiced baby mice a total bilirubin of 7.4 mg % has been found. The majority of deeply jaundiced mice die within 12 to 24 hours.

Ability to produce this jaundice falls off rapidly with advancing days of life, and is most easily induced if inoculation is carried out on the day of birth (Table I).

TABLE I. Influence of Age on Development of Jaundice.

	Age at inoc.				
	Newborn	1 day	2 days	3 days	4-7 days
No. inoc.	275	46	26	47	34
No. jaundice	182	23	10	17	0
%	66	50	38	36	0

Bilirubin is present in both urine and feces during the jaundice. The peripheral blood shows evidence of a hemolytic process when compared with stain smears of control mice injected with nonicterogenic mouse carcass suspensions. Thus polychromatophilia, reticulocytosis and the presence of target cells is marked in degree. Hepatic sections have failed to reveal changes other than the extramedullary hematopoiesis normally found in infancy.

It has not been possible to transmit jaundice serially to other litters by the inoculation of liver, brain or whole carcass suspensions of jaundiced mice. Suckling animals other than mice have not been studied.

The rather striking influence of age of the recipient mice suggests that immaturity of the liver is an important factor in this apparently non-infectious form of jaundice.

Summary. Jaundice has been observed in baby mice inoculated with bacteria-free filtrates of whole carcass suspensions of suckling mice. An hemolytic anemia is associated with the jaundice; mice more than 4 days of age at time of inoculation appear resistant. There is no evidence that the phenomenon is caused by a primary infectious agent.

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