

PERSISTENCE OF PASSIVELY TRANSFERRED MATERNAL ANTIBODIES TO JAPANESE ENCEPHALITIS VIRUS IN MICE

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Evidence is presented on persistence of passively transferred maternal antibodies through foetal membranes and colostrum in infant mice. The immunization schedule for adult female mice (Swiss albino, NIV) and the foster-nursing enabling the studies on pre and/or post-natally derived antibodies has been described earlier (1). Pooled sera from five infants of each group were tested by haemagglutination inhibition (HI) (2) and neutralization tests (neutralizing end point, NEP). Stomach contents (3) collected from the infants of different age groups ranging from 4 to 18 days, born to non-immune dams and fostered by immune dams were also tested for NEP.

HI antibodies could not be detected in the infants acquiring pre-natal protection, while the neutralizing antibodies showed a gradual decline upto second week of life. In contrast, the infants born to non-immune dams fostered by immune dams showed a steady rise of HI antibodies upto two weeks and declined gradually by fifth week, while the neutralizing antibodies showed a peak activity in third week and declined thereafter by sixth week. The suckling infants acquiring both pre and post-natal protection, however, showed prolongation of HI titres as compared to those with only post-natal protection. The peak HI activity in the serum of infants acquiring the protection through placenta and colostrum or through colostrum alone, was observed in the second week, while the neutralizing antibodies peaked at third week of life. The maximum anti-viral activity was observed in the colostrum antibodies during first week of life. As the age of infants advances, this activity tends to decline (Table).

Thus pre-natal antibodies appear to be transient and are probably helpful during very early stages of post-natal life, whereas, post-natally obtained antibodies through colostrum tend to persist for a longer period of time.

Age (days)	Pre-natal		Post-natal		Pre and post-natal	
	HI	NEP	HI	NEP	HI	NEP
0	<10	1.07	—	—	—	—
7	<10	0.87	56.00	1.8	28	1.66
14	<10	0.7	80.00	1.79	80	2.01
21	<10	Nil	20.00	2.33	40	2.05
28	<10	Nil	10	2.00	20	ND
35	<10	Nil	<10	1.18	14	1.04
42	<10		<10	0.45	Nil	<1.00

References

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3. Hayashi, Y., Wada, T., and Mori, R., *J. gen. Virol.* **64**: 1007, 1983.