TABLE II.
Fate of Mice at Several pH-Virus Mixtures; 1:100 and 1:500 Dilutions of Lansing Virus.

Dilution of virus	pH of inoculum	No. mice inoculated*	No. mice dead	Median day deaths 24 hrs after inoc.	Mortality rate, %
1:100	4.0	85	77	6.6	90.5
"	4.6	59	58	5.5	98.2
"	5.0	88	76	6.1	86.3
"	6.0	81	74	7.8	91.3
"	7.0	70	60	7.5	85.7
"	8.0	79	65	7.5	82.2
1:500	4.0	56	47	9.0	84.0
"	4.6	52	50	3.2	96.1
"	5.0	85	64	8.1	75.2
"	6.0	51	45	10.5	88.2
"	7.0	93	73	9.7	78.4
"	8.0	61	46	9.5	75.4

* Surviving 24 hours after inoculation.

dilution of virus is markedly shortened. For pH values other than 4.6 the differences in mortality rates and survival time can be accounted for by chance.

Discussion. The results point out that the Lansing strain of poliomyelitis virus can be eluted best from cotton swabs at pH 8.0. However, the mortality rate at pH 8.0 (and also 5.0) in a large number of mice inoculated with virus at several pH's has been among the lowest in the series. There were between 16 and 21% fewer mice dying at pH 8.0 than at 4.6. The procedure suggested from the data is to elute virus from cotton at pH 8.0, and then readjust the inoculum to pH 4.6 (or 6.0) before testing in animals.

Hammon and Izumi[1] studied the effect of pH on the mortality rate in mice inoculated with Lansing virus. They observed a step-like increase in the mortality rate, and progressive narrowing of survival time with increasing H ion concentration. Our results have evolved using a relatively larger number of animals and more concentrated virus preparations than Hammon and Izumi used. The present data do not show a precise increase in mortality rate with increasing pH; however, Hammon's contentions were demonstrated in higher dilutions of virus than were employed in these experiments.

Summary. A method is reported for eluting the Lansing strain of poliomyelitis virus from cotton swabs. This virus is eluted best from cotton when the diluent is alkaline at pH 8.0. To obtain optimal mortality (morbidity) rates the eluate should be made acid (pH 4.6, etc.) before it is inoculated into mice.

[1] Hammon, W. M., and Izumi, E. M., PROC. SOC. EXP. BIOL. AND MED., 1941, **48**, 579.

15106

Transmission of Streptomycin from Maternal Blood to the Fetal Circulation and the Amniotic Fluid.*

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Streptomycin, an antibiotic substance obtained from the mold *Actinomyces griseus*, supplements penicillin by arresting the growth of many of the gram negative bacilli. It is freely distributed in most body fluids follow-

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TABLE I.
Concentration of Streptomycin in Maternal Blood, Cord Blood, and Amniotic Fluid Following Intravenous Injection of 250,000 Units.

Patient	wt., kg	Interval between injection and delivery		Streptomycin—units per cc		
		hr	min	Maternal blood	Cord blood	Amniotic fluid
O.T.	62	0	19	7	3	3
A.B.	75	0	40	9	2	1
B.C.	67	0	46	8	1	0
D.T.	72	1	0	13	4	5
M.C.	74	1	13	4	2.5	4
S.O.	77	1	27	12	8	5
H.C.	64	1	41	8	2	0
H.Cl.	66	2	30	10	5	1
D.R.	49	2	40	8	8	7
L.B.	65	2	52	4	2	2
C.R.	65	3	16	<1	<1	0
V.T.	80	5	18	1	<1	2
C.B.	52	8	33	<1	0	<1
G.R.	75	11	32	0	0	0

< = Less than.

ing parenteral administration, but it does not reach the spinal fluid very readily in the absence of inflammation, nor does it pass into or out of the alimentary tract readily.[1] It seemed worth while, therefore, to determine its concentrations in cord blood and amniotic fluid as a preliminary step to an evaluation of its usefulness in the treatment of intrauterine infections.

Experimental. Fourteen normal women at term in active labor were given a single intravenous injection of 250,000 units of streptomycin dissolved in 5.0 cc of normal saline. At the time of delivery a specimen of amniotic fluid was obtained from the gush of that fluid which usually accompanies the end of the second stage of labor. At the time the umbilical cord was cut, a specimen of placental cord blood was collected. Immediately thereafter a specimen of blood was withdrawn from the antecubital vein of the mother. Sterile oxalate tubes were used for all specimens. Streptomycin was assayed according to the method of Stebbins and Robinson.[2]

The injection time of the streptomycin solution was 2 minutes. All toxic reactions were subjective and transitory. As the drug was being administered, one patient asked if she were "going to sleep," one complained of "fullness in the head," two of "dizziness," and four of "headache." The remaining 6 patients volunteered no information and showed no signs of toxicity. There was no apparent toxic effect on the baby.

Table I shows: (1) streptomycin to be present in the cord blood and amniotic fluid 19 minutes after intravenous injection into the mother; (2) streptomycin concentrations in the cord blood and amniotic fluid to be generally less than half that found in the maternal blood; and (3) streptomycin concentrations to be very low in the specimens of maternal blood, cord blood, and amniotic fluid obtained more than 3 hours after injection.

Conclusion. Streptomycin appears in the cord blood and in the amniotic fluid following intravenous administration to the mother at term.

[1] Zintel, H. A., Flippin, H. F., Nichols, A. C., Wiley, M. M., and Rhoads, J. E., *Am. J. Med. Sci.*, 1945, **210**, 421.

[2] Stebbins, R. E., and Robinson, H. J., PROC. SOC. EXP. BIOL. AND MED., 1945, **59**, 225.