INFANTS DELIVERED BY CAESAREAN SECTION

GLUCAGON TOLERANCE TESTS

It has been demonstrated that the important factors affecting the level of blood sugar in the mother and infant, include labour, mode of delivery and pretreatment to the mother (Cornblath et al. 1961). It has also been shown that the usual dose of glucagon produces a variable hyperglycaemic response in the infants delivered by Caesarean section with or without antecedent labour. However, when a dose of glucagon is increased to ten times (300 µg./kg.), the difference in the response associated with exposure to labour etc. becomes insignificant (Cornblath et al. 1961). With these considerations the glucagon tolerance tests were performed in ten infants delivered by Caesarean section. A higher dose of glucagon (300 µg./kg., i.m.) was given on the first day of life, while the usual dose of 30 µg./kg., i.m. was administered on the eighth day.

RESULTS:

The results of the mean concentrations of plasma glucose, inorganic phosphorus, potassium, urea and total amino acid nitrogen (TAN) before and after administration of glucagon on the first day (within two to three hours of life) and eighth days are included in Tables 31 and 32 respectively. Table 33 shows the behaviour of the increases in the plasma glucose concentrations on both these days. Fig. 10a demonstrates the trends of the above mentioned parameters while Fig. 11a illustrates the trend of the net increases in the plasma

glucose concentrations.

First day:

The basal plasma glucose concentration before initiation of the glucagon tolerance test, is found to be 43.1 ± 6.20 (mean ± S.E.) mg./100 ml. This level corresponds well with that of the normal infants at similar age.

All the net increases are higher in magnitude and are significantly higher at 90 minutes ($t = 2.81$; $.001 < P < .01$), at 120 minutes ($t = 2.89$; $.001 < P < .01$) and at 150 minutes ($t = 3.32$; $.001 < P < .01$) in comparison to the increases observed in the full-term normal infants at similar intervals.

Maximum plasma glucose concentration of 117.3 ± 10.76 (mean ± S.E.) mg./100 ml. is attained at 120 minutes with a net increase of 74.2 ± 12.29 (mean ± S.E.) mg./100 ml. Thus the prolonged and significantly greater hyperglycaemic response is observed after administration of a large dose of glucagon (300 µg./kg.).

At 150 minutes the level shows a slight fall and attains a concentration of 108.2 ± 11.60 (mean ± S.E.) mg./100 ml. with a net increase of 65.1 ± 12.68 (mean ± S.E.) mg./100 ml.

The initial plasma inorganic phosphorus concentration is found to be 5.67 ± 0.73 (mean ± S.D.) mg./100 ml. The level decreases gradually during the entire tolerance period. A significant fall of 1.23 mg./100 ml. is seen at 150 minutes ($t=4.10$; $P < .001$).

The basal plasma potassium level is found to be 5.36 ± 0.48 (mean ± S.D.) mEq/L. The level gradually decreases upto 120

minutes, when it shows a significant fall of 0.74 mEq/L. ($t = 3.22$; $.001 < P < .01$). No appreciable increase is noticed at 150 minutes.

The plasma urea concentration of 22.5 ± 4.13 (mean ± S.D.) mg./100 ml. is seen initially. The level attains a maximum concentration at 150 minutes with a significant increase of 7.20 mg./100 ml. ($t = 3.6$; $.001 < P < .01$).

The basal TAN level is found to be 7.34 ± 2.19 (mean ± S.D.) mg./100 ml. Unlike urea level, this level reciprocally shows a decreasing trend. The maximum and significant fall of 2.54 mg./100 ml. is observed at 150 minutes ($t=2.23$; $.02 < P < .05$).

Eighth day:

The basal plasma glucose concentration on the eighth day is found to be 57.7 ± 2.39 (mean ± S.E.) mg./100 ml. This level is significantly lower than that observed in the normal infants ($t = 2.75$; $.01 < P < .02$), but is significantly higher than that observed on the first day in the same infants ($t=2.22$; $.02 < P < .05$).

Quicker hyperglycaemic response after glucagon administration on the eighth day is observed as seen in the infants of the other groups. The net increases are significantly more at 20 minutes ($t = 2.46$; $.02 < P < .05$) at 40 minutes ($t=2.23$; $.02 < P < .05$) and is higher at 60 minutes than that observed on the first day of life after (300 µg./kg.) glucagon load.

Maximum level of 126.4 ± 8.26 (mean ± S.E.) mg./100 ml. is

attained at 60 minutes with a net increase of 68.7 ± 9.69 (mean ± S.E.) mg./100 ml.

The level gradually falls and attains a level equivalent to the basal one at 150 minutes.

The basal plasma inorganic phosphorus concentration is found to be 5.57 ± 1.09 (mean ± S.E.) mg./100 ml. The level gradually falls upto 60 minutes, when a maximum decrease of 0.87 mg./100 ml. is noticed. No appreciable rise is observed during the rest of the tolerance period.

The plasma potassium concentration at the initiation of glucagon tolerance test is observed to the 4.53 ± 0.53 (mean ± S.D.) mEq/L. A significant decrease of 1.00 mEq/L. is noticed at 40 minutes ($t=2.78$; $.01 < P < .02$). Gradual increasing trend is seen during the rest of the tolerance period.

The basal plasma urea concentration of 15.4 ± 5.02 (mean ± S.D.) mg./100 ml. is observed initially. This level gradually increases throughout the tolerance period and a significant increase of 5.90 mg./100 ml. is observed at 150 minutes ($t = 2.31$; $.02 < P < .05$).

The initial plasma TAN level is found to be 6.03 ± 2.12 (mean ± S.D.) mg./100 ml. Reciprocally to the urea concentration, TAN level decreases upto 3.27 ± 1.79 (mean ± S.D.) mg./100 ml. with a net significant decrease of 2.76 mg./100 ml. at 150 minutes ($t = 2.53$; $.02 < P < .05$).

Representative data as regards the behaviour of the changes in blood sugar concentrations after glucagon administration in

the infants delivered by Caesarean section during the early neonatal period is summarised in Table 34.

Cornblath et al. (1961) incorporating the study of the infants delivered by Caesarean section, administered glucagon to the infants who had frustrated attempts of labour and to the other, who had no antecedent history of labour (elective Caesarean). The group of infants resembling to that of the present series showed a maximum increase of 46 mg./100 ml. at 60 minutes, after 300 µg. of i.v. glucagon. The results of the present series are higher than those observed by the above authors.

DISCUSSION:

The hyperglycaemic response after a large dose of glucagon (300 µg./kg., i.m.) is quicker, prolonged and of a higher magnitude as compared to that of the normal group. It is unlikely that Caesarean section per se can have any effect of this kind. Migeon, Prystowsky, Grumbach and Byron (1956) and Kenny, Malvaux and Migeon (1963) reported an elevated 17-hydroxycorticosteroid levels in maternal and cord blood after a trial of labour whether delivery occurred vaginally or by Caesarean section. Cornblath et al. (1961) demonstrated that the infants delivered by Caesarean section without undergoing labour after the usual dose of glucagon (300 µg./kg., i.v.) elicited poor response as compared to that of the vaginally delivered infants. These authors gave 300 µg./kg. glucagon (i.v.) and found a higher hyperglycaemic response which they explained on the similar basis that the infants delivered by section without the stress of delivery do not undergo a normal adrenocorticoid stimulation. This results in a poor response to a lower dose of glucagon (30 µg./kg.). However, these effects of lack of adrenocorticoid stimulation are counteracted when a higher dose of glucagon (300 µg./kg.) is given. The results of the present series show a similar trend to that of Cornblath et al. (1961). However, the magnitude of rise is higher in the present series. The mechanisms of action of a higher dose of glucagon are already discussed.

The glucagon responses on the eighth day after the usual dose of 30 µg./kg., i.m. are quicker and appear to be of the same magnitude as seen on the first day after a higher dose. This could be on account of the removal of the effects of the lack of adrenocorticoid stimulation. By the eighth day, the adrenal glands of these infants have undergone physiological adaptation and hence the hyperglycaemic response of the same magnitude is seen with the usual dose of glucagon. Simultaneous increase in the gluconeogenetic activity needs no emphasis.

TABLE 31.

PLASMA GLUCOSE, INORGANIC PHOSPHORUS, POTASSIUM, UREA AND TOTAL AMINO ACID NITROGEN CONCENTRATIONS (MEAN) OF THE INFANTS DELIVERED BY CAESAREAN SECTION ON THE FIRST DAY (within 2 to 3 hours)OF LIFE AFTER GLUCAGON (300 µg./kg., i.m.) ADMINISTRATION. (PRESENT SERIES)

	Basal level	Minutes after glucagon administration					
		20	40	60	90	120	150
Glucose (mg./100 ml.)							
Mean	43.1	67.2	84.8	102.1	114.0	117.3	108.2
S.E.±	6.2	5.40	4.71	5.13	7.70	10.76	11.60
Range	26-79	40-95	73-108	77-122	70-146	69-169	64-169
No.	8	8	8	8	8	8	8
Inorganic phosphorus (mg./100 ml.)							
Mean	5.67	5.20	4.84	4.77	4.64	4.61	4.44
S.D.±	0.73	0.65	0.72	0.58	0.37	0.46	0.41
Range	4.2-6.4	4.0-5.9	3.5-5.9	3.7-7.5	4.0-5.1	4.0-5.4	4.1-5.4
No.	8	8	8	8	8	8	8
Potassium (mEq/L.)							
Mean	5.36	5.22	4.89	4.76	4.69	4.62	4.71
S.D.±	0.48	0.52	0.65	0.62	0.57	0.62	0.46
Range	4.4-5.8	4.2-5.0	3.6-5.7	3.9-5.7	3.7-5.4	3.7-5.4	3.9-5.3
No.	8	8	8	8	8	8	8
Urea (mg./100 ml.)							
Mean	22.5	24.9	25.0	27.2	27.7	28.0	29.7
S.D.±	4.13	4.04	4.37	4.13	3.30	4.50	3.65
Range	16-29	18-32	18-32	20-33	22-32	24-36	24-34
No.	8	8	8	8	8	8	8
Total amino acid nitrogen (mg./100 ml.)							
Mean	7.34	6.28	5.55	5.18	5.32	5.10	4.80
S.D.±	2.19	2.28	3.00	2.30	2.43	2.32	2.34
Range	4.4-10.5	3.3-10.0	1.2-10.0	2.0-8.6	2.5-8.8	1.8-8.6	1.7-8.1
No.	8	8	8	8	8	8	8

TABLE 32.

PLASMA GLUCOSE, INORGANIC PHOSPHORUS, POTASSIUM, UREA AND TOTAL AMINO ACID NITROGEN CONCENTRATIONS (MEAN) OF THE INFANTS DELIVERED BY CAESAREAN SECTION ON THE EIGHTH DAY OF LIFE AFTER GLUCAGON (30 µg./kg., i.m.) ADMINISTRATION. (PRESENT SERIES)

	Basal level	Minutes after glucagon administration					
		20	40	60	90	120	150
Glucose (mg./100 ml.)							
Mean	57.7	97.9	119.9	126.4	104.4	77.4	57.6
S.E.±	2.39	2.98	5.57	8.26	7.79	5.29	2.14
Range	46-65	89-112	103-146	107-162	79-134	56-93	46-68
No.	7	7	7	7	7	7	7
Inorganic phosphorus (mg./100 ml.)							
Mean	5.57	5.03	4.73	4.70	4.74	4.73	4.83
S.D.±	1.09	1.02	1.01	0.88	0.88	0.65	0.61
Range	3.9-6.8	3.2-6.2	3.0-5.9	3.4-5.9	3.2-5.9	3.4-5.4	3.9-5.6
No.	7	7	7	7	7	7	7
Potassium (mEq/L.)							
Mean	4.53	4.04	3.53	3.60	3.86	3.73	4.23
S.D.±	0.53	0.67	0.78	0.78	0.59	0.88	0.79
Range	3.3-5.1	3.3-4.9	2.4-4.6	2.4-4.4	3.1-4.5	2.8-4.9	2.9-5.3
No.	7	7	7	7	7	7	7
Urea (mg./100 ml.)							
Mean	15.4	17.1	17.6	18.0	19.7	19.8	21.3
S.D.±	5.02	5.45	5.40	5.31	4.38	4.45	4.50
Range	8-20	10-24	10-25	10-24	13-26	15-27	15-26
No.	7	7	7	7	7	7	7
Total amino acid nitrogen (mg./100 ml.)							
Mean	6.03	5.20	4.16	3.36	3.44	3.56	3.27
S.D.±	2.12	2.68	2.41	2.70	1.90	1.30	1.79
Range	2.6-8.7	0.9-8.7	0.9-8.2	0.9-8.7	0.6-6.1	1.7-5.4	1.4-6.8
No.	7	7	7	7	7	7	7

TABLE 33.

INCREASE IN THE PLASMA GLUCOSE CONCENTRATIONS (mg./100 ml.) OF THE INFANTS DELIVERED BY CAESAREAN SECTION ON THE FIRST (within 2 to 3 hours) AND EIGHTH DAY OF LIFE AFTER GLUCAGON (300 µg./kg. on the first day and 30 µg./kg. on the eighth day, i.m.) ADMINISTRATION. (PRESENT SERIES)

	Basal level	Minutes after glucagon administration					
		20	40	60	90	120	150
First day (within 2 to 3 hours)							
Mean	43.1	24.1	41.7	59.0	70.9	74.2	65.1
S.E.±	6.2	3.96	5.00	6.25	8.82	12.29	12.68
Range	26-79	7-40	18-66	35-85	38-111	37-135	32-134
No.	8	8	8	8	8	8	8
Eighth day							
Mean	57.7	40.2	62.2	68.7	46.7	19.7	-0.14
S.E.±	2.39	5.25	8.16	9.69	8.93	4.81	2.57
Range	46-65	25-66	39-100	40-116	18-77	3-36	-10 to 11
No.	7	7	7	7	7	7	7

TABLE 34.

INCREASE IN THE BLOOD SUGAR CONCENTRATIONS (mg./100 ml.) AFTER GLUCAGON ADMINISTRATION IN THE INFANTS DELIVERED BY CAESAREAN SECTION. (REPRESENTATIVE DATA FROM LITERATURE)

Author & (Year)	Infants	Age	Glucagon dose		Fasting level	Minutes after glucagon administration 30	60	90	120
Cornblath et al. (1961)	Labour-No, fluid to mother-glucose	0-3 hours	30 µg./kg. i.v.	Mean S.Em.± Range No.	52 9.2 20-102	13 4.7 -4 to 38	16 6.8 -23 to 38 9	14 8.6 -32 to 37	13 8.5 -28 to 48
Method: Nelson-Somogyi.	Labour-No, fluid to mothers-saline	0-3 hours	30 µg./kg. i.v.	Mean S.Em.± Range No.	55 4.2 41-71	10 5.5 -5 to 34	15 5.2 0-37 7	15 8.1 -10 to 48	19 8.4 -11 to 59
	Labour-No, fluid to mother-glucose	0-3 hours	300 µg./kg. i.v.	Mean S.Em.± Range No.	44 2.4 24-58	24 2.5 14-48	42 3.8 27-81 16	54 4.5 38-78	50 3.1 33-77
[illegible]	Labour-Yes, fluid to mother-glucose	0-3 hours	30 ug. µg./kg. i.v.	Mean S.Em.± Range No.	87 14.7 53-144	28 6.4 11-51	39 8.1 10-60 6	21 13.4 -6 to 64	13 13.0 -28 to 53
	Labour-Yes, fluid to mother-glucose	0-3 hours	300 ug./kg. i.v.	Mean S.Em.± Range No.	58 5.4 44-72	26 4.4 17-40	46 2.7 37-51 5	- - -	44 6.9 25-61

FIGURE 10a.

PLASMA GLUCOSE, INORGANIC PHOSPHORUS, POTASSIUM, UREA AND TOTAL AMINO ACID NITROGEN CONCENTRATIONS (MEAN) OF THE INFANTS DELIVERED BY CAESAREAN SECTION ON THE FIRST (■–.–.–■) AND EIGHTH (□–.–.–□) DAY OF LIFE AFTER GLUCAGON (300 µg./kg. on the first day and 30 µg./kg. on the eighth day, i.m.) ADMINISTRATION.

FIGURE 10b.

PLASMA GLUCOSE, INORGANIC PHOSPHORUS AND POTASSIUM CONCENTRATIONS (MEAN) OF THE INFANTS DELIVERED BY CAESAREAN SECTION ON THE SECOND (■–.–.–■) AND EIGHTH (□–.–.–□) DAY OF LIFE AFTER GLUCOSE (2.5 G/kg., oral) ADMINISTRATION.

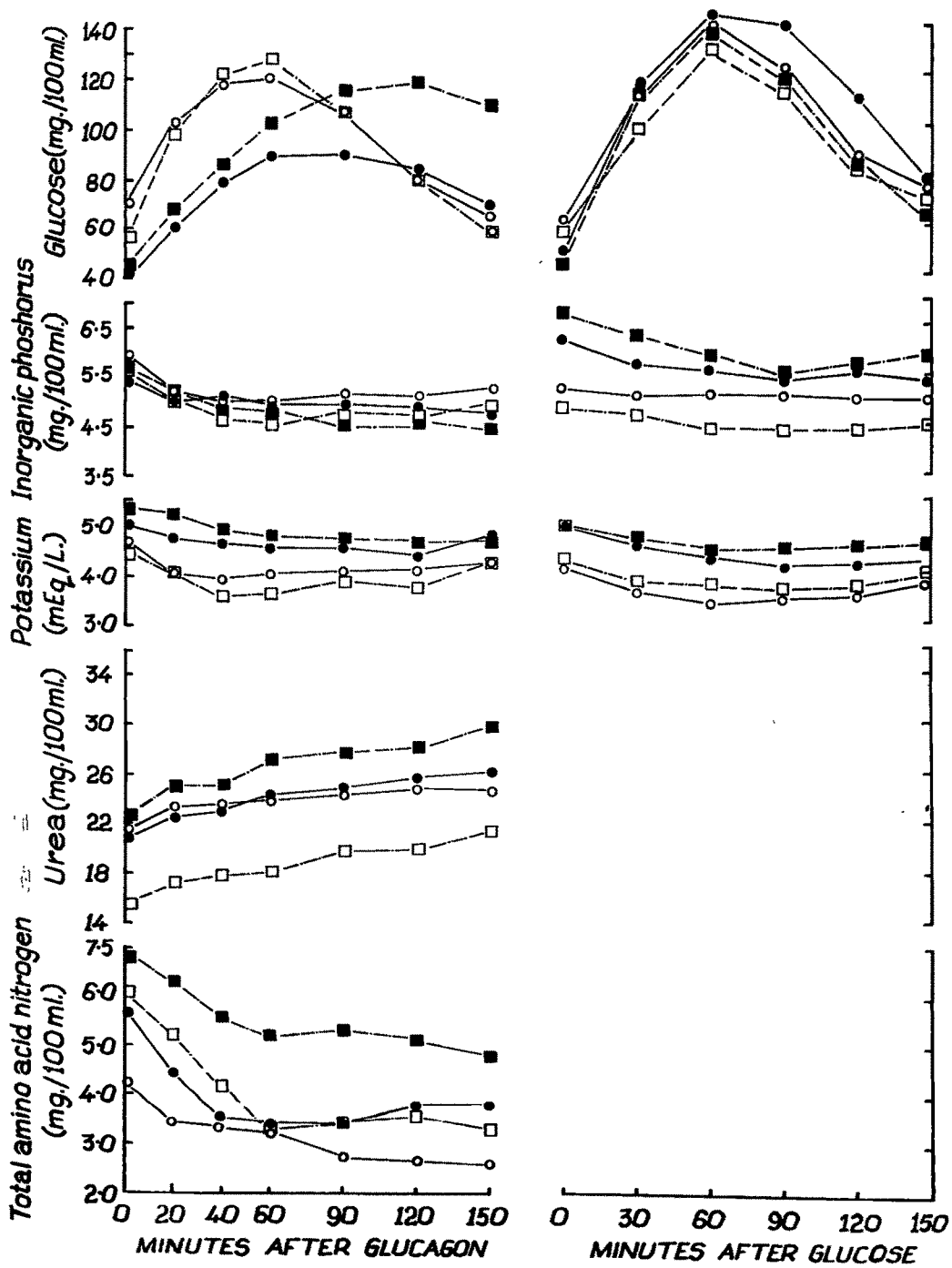
Glucose(mg./100ml.)
140
120
100
80
60
40
Inorganic phosphorus (mg./100ml.)
6·5
5·5
4·5
3·5
Potassium (mEq./L.)
5·0
4·0
3·0
Urea(mg./100ml.)
34
30
26
22
18
14
Total amino acid nitrogen (mg./100 ml.)
7·5
6·0
5·0
4·0
3·0
2·0
0 20 40 60 90 120 150
MINUTES AFTER GLUCAGON
0 30 60 90 120 150
MINUTES AFTER GLUCOSE

Fig. 10 a. 10 b.

FIGURE 11a.

INCREASE IN PLASMA GLUCOSE CONCENTRATIONS (Δmg./100 ml.) OF THE INFANTS DELIVERED BY CAESAREAN SECTION ON THE FIRST (■—.—.■) AND EIGHTH (□—·—·□) DAY AFTER GLUCAGON (300 ug./kg. on the first day and 30 ug./kg. on the eighth day, i.m.) ADMINISTRATION.

FIGURE 11b.

INCREASE IN PLASMA GLUCOSE CONCENTRATIONS (Δ mg./100 ml.) OF THE INFANTS DELIVERED BY CAESAREAN SECTION ON THE SECOND (■—·—·■) AND EIGHTH (□—·—·□) DAY AFTER GLUCOSE (2.5 G/kg., oral) ADMINISTRATION.

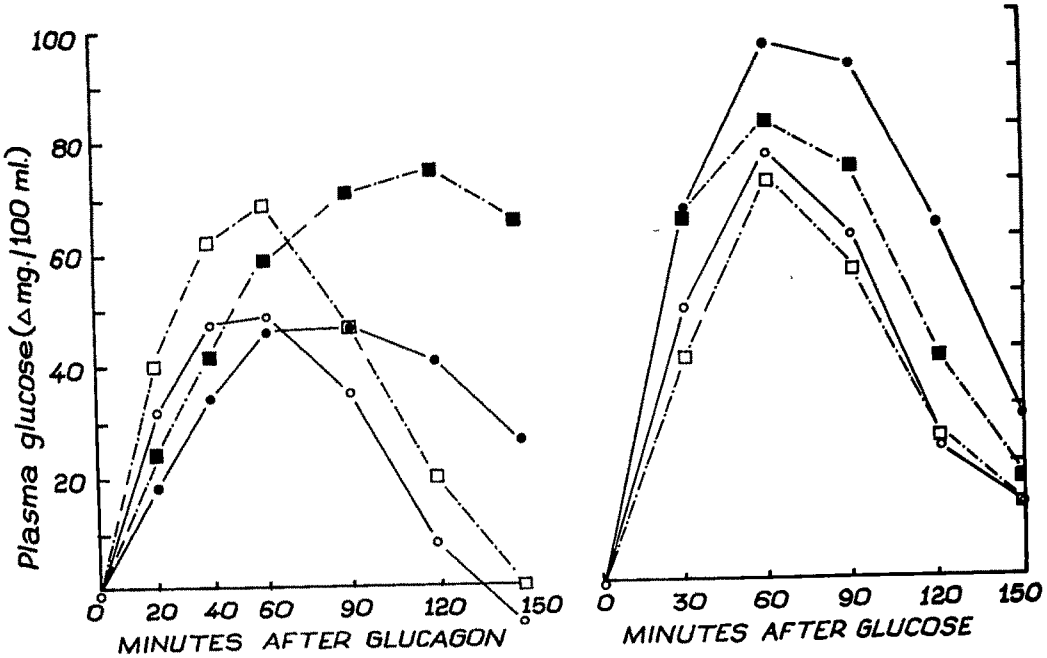

Fig. 11 a. 11 b.

GLUCOSE TOLERANCE TESTS

To evaluate the trend of glucose disappearance in the infants delivered by Caesarean section, glucose tolerance tests have been carried out on the second and eighth days of life after an usual oral glucose load.

RESULTS:

The results of the mean plasma glucose, inorganic phosphorus and potassium concentrations after oral glucose load on the second and eighth days have been summarised in Tables 35 and 36 respectively. The net increases in the glucose concentration are presented in Table 37. Fig. 10b represents the behaviour of the above mentioned parameters for the second and eighth days. The trends of the net increases in the plasma glucose concentration are illustrated in Fig. 11b.

Second day:

The basal plasma glucose concentration before the initiation of the oral glucose tolerance test is found to be 44.5 ± 4.25 (mean ± S.E.) mg./100 ml. This level is somewhat lower than that observed in the normal infants on the second day of life.

Maximum level of 126.0 ± 13.88 (mean ± S.E.) mg./100 ml. is attained at 60 minutes after administration of oral glucose with a net rise of 81.5 ± 13.2 (mean ± S.E.) mg./100 ml. This net increase is comparatively lower than that seen in the normal group.

All other net increases following thereafter viz. at 90, 120 and 150 minutes are similarly lower than those observed in the full-term normal infants at similar intervals.

At 150 minutes, a concentration of 62.0 ± 8.86 (mean ± S.E.) mg./100 ml. is seen in the plasma glucose level with a net rise of 17.5 ± 10.7 (mean ± S.E.) mg./100 ml.

The basal plasma inorganic phosphorus concentration is found to be 6.74 ± 0.65 (mean ± S.D.) mg./100 ml. A significant fall of 1.25 mg./100 ml. is noticed at 90 minutes after glucose administration ($t = 4.17$; $P < .001$). This decrease is more than that seen in the normal group. Little increase in the level is seen during the rest of the tolerance period.

The basal plasma potassium concentration is found to be 4.92 ± 0.88 (mean ± S.D.) mEq/L. The level decreases upto 60 minutes when a maximum fall of 0.50 mEq/L. is noticed. The level thereafter is followed by an insignificant rise.

Eighth day:

The initial plasma glucose concentration before oral glucose administration is found to be 57.6 ± 2.14 (mean ± S.E.) mg./100 ml.

The maximum level of 128.7 ± 11.69 (mean ± S.E.) mg./100 ml. is attained at 60 minutes. The net increase of 71.1 ± 11.2 (mean ± S.E.) mg./100 ml. is comparable to that observed in the normal group on the eighth day of life.

The level of 68.6 ± 6.80 (mean ± S.E.) mg./100 ml. is observed at 150 minutes with a net increase of 11.0 ± 6.8 (mean ± S.E.) mg./100 ml.

The general pattern of all the net increases in this group is nearly, if not exactly, the same to that of the normal infants.

The basal plasma inorganic phosphorus concentration is seen to be 4.83 ± 0.61 (mean ± S.D.) mg./100 ml. The maximum net decrease of 0.44 mg./100 ml. is observed at 120 minutes. No appreciable rise is seen thereafter at 150 minutes.

The initial plasma potassium concentration of 4.23 ± 0.79 (mean ± S.D.) mEq/L. is observed before the administration of glucose. Maximum fall of 0.59 mEq/L. is seen at 90 minutes. An upward trend is seen thereafter during the rest of the tolerance period.

Representative data as regards the behaviour of plasma/blood glucose/sugar, phosphorus and potassium concentrations after an oral load of glucose in the infants delivered by Caesarean section are not available from the literature.

DISCUSSION:

The mean trends of the net increases in the plasma glucose concentration after an oral glucose load on the second day of life are similar to those found in the infants delivered by forceps application. Almost all the infants in the present series have undergone more stressful delivery resulting in a more traumatic birth. Thus the genesis of an increased rate of glucose disappearance observed in the present group could be more or less similar to that in the preceding group of infants.

On the eighth day of life the rate of glucose disappearance as seen from the net increases in plasma glucose levels is comparable to that of the full-term normal infants, which needs no further comments.

TABLE 35.

PLASMA GLUCOSE, INORGANIC PHOSPHORUS AND POTASSIUM CONCENTRATIONS (MEAN) OF THE INFANTS DELIVERED BY CAESAREAN SECTION ON THE SECOND DAY OF LIFE AFTER GLUCOSE (2.5 G/kg., oral) ADMINISTRATION. (PRESENT SERIES)

	Basal level	Minutes after glucose administration				
		30	60	90	120	150
Glucose (mg./100 ml.)						
Mean	44.5	111.0	126.0	116.5	83.7	62.0
S.E.±	4.25	14.81	13.88	17.81	14.00	8.86
Range	26-61	55-183	73-194	65-225	38-167	31-115
No.	8	8	8	8	8	8
Inorganic phosphorus (mg./100 ml.)						
Mean	6.74	6.30	5.90	5.49	5.68	5.90
S.D.±	0.65	0.64	0.60	0.55	0.51	0.55
Range	5.6-7.8	5.4-7.3	5.3-7.0	4.9-6.8	4.9-6.6	5.0-6.5
No.	8	8	8	8	8	8
Potassium (mEq/L.)						
Mean	4.92	4.64	4.42	4.48	4.53	4.56
S.D.±	0.88	1.03	0.95	1.05	1.03	1.00
Range	4.0-6.6	3.2-6.5	3.3-6.4	3.0-6.6	3.1-6.6	3.4-6.6
No.	8	8	8	8	8	8

TABLE 36.

PLASMA GLUCOSE, INORGANIC PHOSPHORUS AND POTASSIUM CONCENTRATIONS (MEAN)OF THE INFANTS DELIVERED BY CAESAREAN SECTION ON THE EIGHTH DAY OF LIFE AFTER GLUCOSE (2.5 G/kg., oral) ADMINISTRATION. (PRESENT SERIES)

	Basal level	Minutes after glucose administration 30	60	90	120	150
Glucose (mg./100 ml.)						
Mean	57.6	97.3	128.7	112.6	82.1	68.6
S.E.±	2.14	8.15	11.69	9.89	8.94	6.80
Range	48-68	72-130	98-178	76-145	44-119	43-100
No.	7	7	7	7	7	7
Inorganic phosphorus (mg./100 ml.)						
Mean	4.83	4.70	4.40	4.40	4.39	4.50
S.D.±	0.61	0.74	0.58	0.40	0.53	0.50
Range	3.9-5.6	3.8-5.5	3.5-5.1	3.8-5.1	3.7-5.3	3.8-5.2
No.	7	7	7	7	7	7
Potassium (mEq/L.)						
Mean	4.23	3.80	3.74	3.64	3.73	3.90
S.D.±	0.79	0.63	0.73	0.74	0.63	0.74
Range	2.9-5.3	2.9-4.8	2.9-5.0	2.6-4.8	2.6-4.5	2.6-4.8
No.	7	7	7	7	7	7

TABLE 37.

INCREASE IN THE PLASMA GLUCOSE CONCENTRATIONS (mg./100 ml.)OF THE INFANTS DELIVERED BY CAESAREAN SECTION ON THE SECOND AND EIGHTH DAY OF LIFE AFTER GLUCOSE (2.5 G/kg.,oral)ADMINISTRATION. (PRESENT SERIES)

	Basal level	Minutes after glucose administration				
		30	60	90	120	150
Second day						
Mean	44.5	65.5	81.5	72.0	39.2	17.5
S.E.±	4.2	13.4	13.2	18.2	16.8	10.7
Range	26-61	29-129	26-150	4-181	-7 to 123	-15 to 71
No.	8	8	8	8	8	8
Eighth day						
Mean	57.6	39.7	71.1	55.0	24.5	11.0
S.E.±	2.14	7.30	11.2	10.4	9.1	6.8
Range	48-68	17-73	43-121	17-86	10-60	-8 to 41
No.	7	7	7	7	7	7