

RESULTS AND THEIR ANALYSIS

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The collective results of the laboratory studies done for cases with hypotonic, isotonic, and hypertonic dehydration are presented in Tables A, B, and C respectively.

Details of these results and the statistical analysis of the data are discussed in the following text.

1. Body weight (kg.)

Table 1 & 2

percent dehydration

Hypotonic dehydration:

The number of the cases in this group was 36 cases.

On admission, they had body weights ranging between 2.8 & 8.0 kg, with a mean value of 5.61 ± 1.29 .

After full rehydration, they had body weights ranging between 3.3 & 8.5 kg, with a mean value of 6.09 ± 1.32 .

Isotonic dehydration:

The number of the cases in this group was 54 cases.

On admission, they had body weights ranging between 3.6 & 9.0 kg, with a mean value of 5.59 ± 1.36 .

After full rehydration, they had body weights ranging between 4.0 & 9.8 kg, with a mean value of 6.03 ± 1.40 .

Hypertonic dehydration:

The number of cases in this group was 32 cases.

On admission, they had body weights ranging between 3.8 & 8.2 kg, with a mean value of 6.08 ± 1.41 .

After full rehydration, they had body weights ranging between 4.1 & 8.6 kg, with a mean value of 6.54 ± 1.42 .

2.Sodium level (mEq/L) Table 3 & 4

Hypotonic dehydration:

The number of cases in this group was 36 cases.

On admission, they had sodium levels ranging between 105 & 131 mEq/L, with a mean value of 123.92 ± 5.86 .

After full rehydration, they had sodium levels ranging between 126 & 147 mEq/L, with a mean value of 134.89 ± 5.25 .

Isotonic dehydration:

The number of cases in this group was 54 cases.

On admission, they had sodium levels ranging between 130 & 148 mEq/L, with a mean value of 138.52 ± 4.51 .

After full rehydration, they had sodium levels ranging between 130 & 151 mEq/L, with a mean value of 139.91 ± 4.80 .

Hypertonic dehydration:

The number of cases in this group was 32 cases.

On admission, they had sodium levels ranging between 151 & 191 mEq/L, with a mean value of 162.81 ± 11.48 .

After full rehydration, they had sodium levels ranging between 131 & 158 mEq/L, with a mean value of 143.88 ± 6.10 .

3. Potassium level (mEq/L) Table 5 & 6

Hypotonic dehydration:

The number of cases in this group was 36 cases.

On admission, they had potassium levels ranging between 1.5 & 4.6 mEq/L, with a mean value of 2.80 ± 1.04 .

After full rehydration, they had potassium levels ranging between 1.7 & 4.6 mEq/L, with a mean value of 3.27 ± 0.85 .

Isotonic dehydration:

The number of cases in this group was 54 cases.

On admission, they had potassium levels ranging between 1.6 & 5.5 mEq/L, with a mean value of 3.33 ± 0.91 .

After full rehydration, they had potassium levels ranging between 1.8 & 4.9 mEq/L, with a mean value of 3.59 ± 0.75 .

Hypertonic dehydration:

The number of cases in this group was 32 cases.

On admission, they had potassium levels ranging between 2.3 & 4.9 mEq/L, with a mean value of 3.63 ± 0.68 .

After full rehydration, they had potassium levels ranging between 2.6 & 4.9 mEq/L, with a mean value of 3.80 ± 0.60 .

4. Osmolality (mOsm/L):

Table 7 & 8

Hypotonic dehydration:

The number of cases in this group was 36 cases.

On admission, they had osmolality levels ranging between 239 & 299 mOsm/L, with a mean value of 260.22 ± 30.12 .

After full rehydration they had osmolality levels ranging between 258 & 300 mOsm/L, with a mean value of 278.75 ± 10.71 .

Isotonic dehydration:



The number of cases in this group was 54 cases.

On admission, they had osmolality levels ranging between 260 & 349 mOsm/L, with a mean value of 287.91 ± 18.00 .

After full rehydration, they had osmolality levels ranging between 267 & 305 mOsm/L, with a mean value of 283.06 ± 9.02 .

Hypertonic dehydration:

The number of cases in this group was 32 cases.

On admission, they had osmolality levels ranging between 300 & 379 mOsm/L, with a mean value of 334.22 ± 20.03 .

After full rehydration, they had osmolality levels ranging between 270 & 308 mOsm/L, with a mean value of 289.78 ± 10.80 .

Case No.	Body weight (Kg)		Na (mEq/L)		K (mEq/L)		Osmolality (mOsm/L)	
	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	24 hrs.
1	2.8	3.3	131	137	3.2	4.6	270	300
2	3.9	4.5	128	139	3.9	3.5	274	298
3	4.0	4.5	130	135	3.8	3.5	264	278
4	4.6	5.2	128	133	1.7	1.9	260	270
5	5.0	5.5	117	134	4.3	3.9	246	261
6	7.0	7.8	129	140	4.4	4.5	273	277
7	4.0	4.4	114	136	2.1	4.6	240	270
8	6.3	6.7	126	144	3.2	4.3	248	286
9	3.5	3.8	124	128	2.5	2.6	259	268
10	5.9	6.4	119	130	3.0	3.1	244	268
11	5.4	5.8	126	131	1.5	2.7	272	279
12	5.5	6.1	127	130	1.5	2.6	266	277
13	5.7	6.0	129	132	2.6	2.9	256	267
14	5.0	5.6	124	136	4.3	4.3	251	258
15	6.4	6.7	121	129	1.6	1.7	253	294

Table A- Collective results of cases with Hypotonic dehydration.

Case No.	Body weight (Kg)		Na (mEq/L)		K (mEq/L)		Osmolality (mOsm/L)	
	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	≥ 4 hrs.	0 hr.	24 hrs.
16	8.0	8.2	129	145	2.0	3.2	262	283
17	6.0	6.3	126	135	1.6	2.7	265	276
18	6.1	6.6	119	134	1.5	2.4	239	270
19	6.5	6.8	120	145	3.9	4.0	261	290
20	6.4	7.1	126	147	1.9	2.0	286	289
21	6.1	6.5	117	139	3.5	3.8	260	280
22	5.5	5.6	120	130	4.6	4.3	249	268
23	4.5	4.7	127	131	1.7	2.2	259	269
24	7.0	7.4	121	130	3.1	4.0	251	267
25	6.9	7.3	125	138	4.0	4.4	243	268
26	7.0	7.9	130	133	2.6	2.1	280	280
27	6.0	6.4	125	137	1.6	4.1	258	276
28	5.1	5.7	124	132	2.4	2.7	256	275
29	7.0	7.5	120	130	2.4	2.9	244	268
30	7.6	8.5	126	133	1.8	3.1	266	283

Table A - Cont. 1

Case No.	Body weight (Kg)		Na (mEq/L)		K (mEq/L)		Osmolality (mOsm/L)	
	0 hr.	24 hrs	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	24 hrs.
31	4.8	5.2	126	129	1.5	2.9	260	284
32	6.5	6.9	105	126	4.3	2.2	299	295
33	7.7	8.4	111	145	2.4	4.3	245	291
34	4.9	5.3	130	135	2.9	3.1	272	289
35	3.7	4.2	130	134	3.0	3.3	270	286
36	3.8	4.5	131	134	4.6	3.3	267	287

Table A - Cont. 2

Case No.	Body weight (Kg)		Na (mEq/L)		K (mEq/L)		Osmolality (mOsm/L)	
	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	24 hrs.
1	4.0	4.3	141	136	3.0	2.3	292	289
2	3.7	4.0	137	144	3.4	4.0	277	277
3	4.0	4.5	132	145	2.5	3.7	273	273
4	5.0	5.6	133	140	3.1	3.0	278	301
5	5.1	5.6	145	145	3.5	3.4	320	298
6	4.0	4.4	148	151	3.4	3.9	303	294
7	4.0	4.3	141	150	4.5	4.2	300	272
8	6.0	6.6	139	137	5.5	4.9	276	276
9	5.0	5.3	141	147	2.2	2.4	281	291
10	5.9	6.3	135	146	3.6	3.3	275	297
11	5.4	6.0	139	139	2.8	2.7	287	277
12	4.2	4.3	134	136	4.3	4.0	265	282
13	5.0	5.5	133	147	3.7	4.5	260	289
14	6.0	6.4	137	133	5.5	4.5	318	279
15	5.0	5.4	130	146	3.0	3.1	267	268

Table B - Collective results of cases with Isotonic dehydration.

Case No.	Body weight (Kg)		Na (mEq/L)		K (mEq/L)		Osmolality (mOsm/L)	
	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	24 hrs.
16	4.5	4.9	130	142	2.4	2.9	267	267
17	5.5	6.1	137	147	5.4	4.4	305	295
18	6.3	6.5	138	133	4.2	4.4	269	290
19	6.3	6.7	135	135	3.4	4.1	271	278
20	4.5	4.9	141	132	2.6	3.8	281	273
21	4.0	4.5	133	146	3.9	3.4	268	288
22	5.7	5.8	139	142	1.6	2.1	270	291
23	5.1	5.5	145	144	3.8	4.0	306	289
24	3.6	4.0	134	135	3.1	3.0	275	278
25	4.5	5.0	135	141	2.6	3.2	273	280
26	6.1	6.6	148	140	3.4	3.4	309	293
27	5.7	6.1	136	139	3.3	2.9	281	268
28	4.0	4.5	134	135	3.4	4.0	300	275
29	7.0	7.6	141	136	2.1	2.4	304	278
30	4.0	4.6	141	138	2.1	1.8	270	273

Table B - Cont. 1

Case No.	Body weight (Kg)		Na (mEq/L)		K (mEq/L)		Osmolality (mOsm/L)	
	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	24 hrs.
16	4.5	4.9	130	142	2.4	2.9	267	267
17	5.5	6.1	137	147	5.4	4.4	305	295
18	6.3	6.5	138	133	4.2	4.4	269	290
19	6.3	6.7	135	135	3.4	4.1	271	278
20	4.5	4.9	141	132	2.6	3.8	281	273
21	4.0	4.5	133	146	3.9	3.4	268	288
22	5.7	5.8	139	142	1.6	2.1	270	291
23	5.1	5.5	145	144	3.8	4.0	306	289
24	3.6	4.0	134	135	3.1	3.0	275	278
25	4.5	5.0	135	141	2.6	3.2	273	280
26	6.1	6.6	148	140	3.4	3.4	309	293
27	5.7	6.1	136	139	3.3	2.9	281	268
28	4.0	4.5	134	135	3.4	4.0	300	275
29	7.0	7.6	141	136	2.1	2.4	304	278
30	4.0	4.6	141	138	2.1	1.8	270	273

Table B - Cont. 1

Case No.	Body weight (Kg)		Na (mEq/L)		K (mEq/L)		Osmolality (mOsm/L)	
	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	24 hrs.
46	8.2	8.5	136	139	2.0	4.1	280	286
47	9.0	9.8	143	132	3.7	3.4	307	279
48	8.1	8.7	138	133	4.4	4.6	283	294
49	6.4	7.0	144	138	1.9	2.1	305	289
50	4.0	4.5	146	138	2.8	4.2	300	271
51	5.0	5.2	136	141	4.0	2.3	288	290
52	5.5	6.0	139	137	3.2	3.6	289	280
53	8.5	9.1	138	140	3.1	4.3	291	280
54	4.5	5.5	137	136	4.1	4.6	288	277

Table B - Cont.3

Case No.	Body weight (Kg)		Na (mEq/L)		K (mEq/L)		Osmolality (mOsm/L)	
	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	24 hrs.
1	7.4	8.0	164	149	4-4	4.3	355	303
2	5.5	5.9	160	152	4-3	4.6	355	297
3	5.7	6.1	160	144	3-5	3.5	327	291
4	4.2	4.7	188	153	3-4	3.4	379	291
5	5.0	5.5	175	140	3-6	3.6	360	273
6	4.0	4.6	174	143	4-2	4.2	319	290
7	6.0	6.7	173	144	4-3	3.2	326	273
8	4.7	5.3	160	149	2-5	3.4	330	289
9	3.8	4.1	158	137	4-0	3.2	320	271
10	4.0	4.3	151	135	3-7	4.0	324	270
11	7.5	7.9	166	156	4-3	3.1	356	308
12	7.4	8.0	164	149	4-4	4.5	355	300
13	5.5	6.0	158	140	3-6	4.1	342	301
14	7.5	7.8	158	145	4-9	4.3	330	300
15	5.2	6.0	154	131	4-3	4.9	309	287

Table C - Collective results of cases with Hyper-tonic dehydration.

Case No.	Body weight (Kg)		Na (mEq/L)		K (mEq/L)		Osmolality (mOsm/L)	
	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	24 hrs.	0 hr.	24 hrs.
16	6.5	6.8	181	158	3.6	3.7	342	285
17	8.0	8.6	154	141	3.8	3.7	300	299
18	5.1	5.6	155	145	2.9	3.5	303	290
19	4.0	4.5	160	141	3.0	3.2	344	292
20	8.0	8.4	160	150	3.2	2.8	325	308
21	7.4	8.0	162	136	3.7	4.1	345	287
22	6.0	6.5	176	137	4.4	4.6	320	270
23	5.0	5.3	175	140	3.6	3.6	369	273
24	5.4	6.0	157	147	2.7	3.7	326	299
25	7.0	7.2	151	143	2.4	2.6	303	290
26	8.2	8.6	157	147	2.3	4.7	335	299
27	8.0	8.5	191	142	3.3	3.2	356	283
28	7.4	8.0	162	136	3.7	4.1	345	287
29	7.3	7.7	160	144	3.1	3.8	300	286
30	6.7	7.1	157	143	3.4	3.0	343	285

Table C - Cont. 1

	No. of cases	Range	Mean	SD.
hypotonic dehydration	36	2.8 - 8.0	5.61	± 1.29
isotonic dehydration	54	3.6 - 9.0	5.59	± 1.36
hypertonic dehydration	32	3.8 - 8.2	6.08	± 1.41

Table 1. Body weight on admission (0hr.)

	No. of cases	Range	Mean	SD.
hypotonic dehydration	36	3.3 - 8.5	6.09	± 1.32
isotonic dehydration	54	4.0 - 9.8	6.03	± 1.40
hypertonic dehydration	32	4.1 - 8.6	6.54	± 1.42

Table 2. Body weight after full rehydration (24 hrs.)

	No. of cases	Range	Mean	SD.
Hypotonic dehydration	36	105 - 131	123.82	<u>+5.86</u>
Isotonic dehydration	54	130 - 148	138.52	<u>+4.51</u>
Hypertonic dehydration	32	151 - 191	162.81	<u>+11.48</u>

Table 3. Sodium level on admission (0 hr.)

	No. of cases	Range	Mean	SD.
Hypotonic dehydration	36	126 - 147	134.89	<u>+5.86</u>
Isotonic dehydration	54	130 - 148	139.91	<u>+4.8</u>
Hypertonic dehydration	32	131 - 158	143.88	<u>+6.1</u>

Table 4. Sodium level after full rehydration (24 hrs.)

	No. of cases	Range	Mean	SD.
Hypotonic dehydration	36	1.5 - 4.6	2.8	<u>+1.04</u>
Isotonic dehydration	54	1.6 - 5.5	3.33	<u>+0.81</u>
Hypertonic dehydration	32	2.3 - 4.9	3.63	<u>+0.68</u>

Table 5. Potassium level on admission (0 hr.)

	No. of cases	Range	Mean	SD.
Hypotonic dehydration	36	1.7 - 4.6	3.27	<u>+0.85</u>
Isotonic dehydration	54	1.8 - 4.9	3.59	<u>+0.75</u>
Hypertonic dehydration	32	2.6 - 4.9	3.80	<u>+0.60</u>

Table 6 Potassium level after full rehydration (24 hrs.)

	No. of cases	Range	Mean	SD.
Hypotonic dehydration	36	239 - 299	260.22	<u>+30.12</u>
Isotonic dehydration	54	260 - 349	287.81	<u>+18.00</u>
Hypertonic dehydration	32	300 - 379	334.22	<u>+20.03</u>

Table 7 . Osmolality on admission (0 hr.)

	No. of cases	Range	Mean	SD.
Hypotonic dehydration	36	258 - 300	278.75	<u>+10.71</u>
Isotonic dehydration	54	267 - 305	283.06	<u>+9.02</u>
Hypertonic dehydration	32	270 - 309	289.78	<u>+10.80</u>

Table 8 . Osmolality after full rehydration (24 hrs.)