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APPENDICES

Concentrations of glucose were calculated by using standard curve between absorbance value and glucose concentration and presented in mmol L^{-1} at each time interval following root canal obturation.

$$Y = 0.054936+0.2424X \quad (R^2 = 0.9984)$$

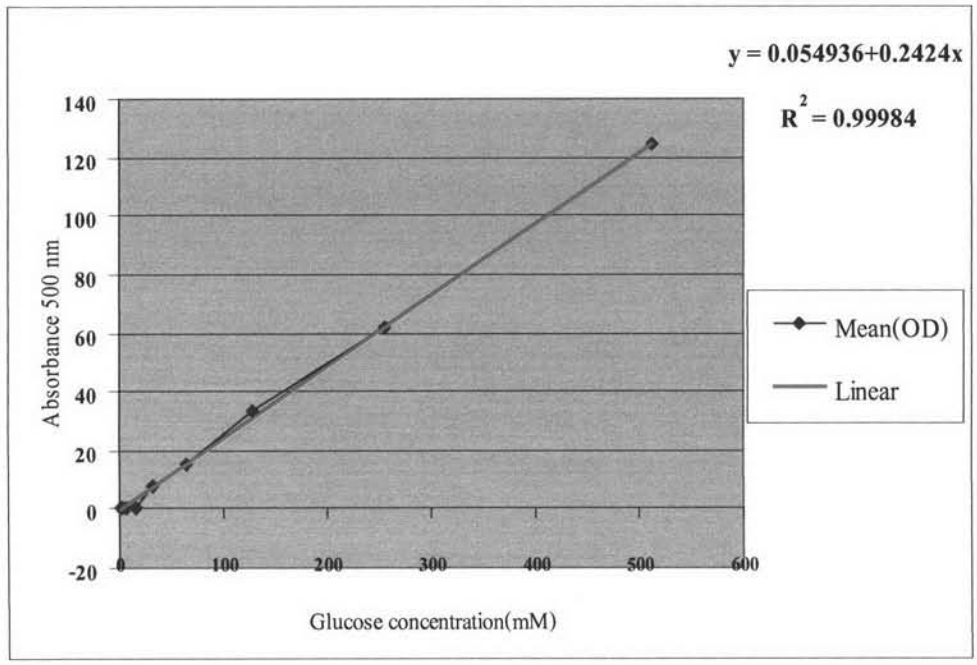

Figure 20 Standard curves between glucose comcentration (mM) and absorbance (500 nm)

Limitation

The lowest glucose level for which the current procedure is believed to be accurate is 0.04 mmol L^{-1} which derive from an absorbance value of 0.05. Therefore the absorbance value < 0.05 was calculated 0 mM glucose concentration.

Table 6 The leakage amount of glucose concentration in group 1.

Sample No	Day1		Day7		Week 1	Day14		Week 2	Day21		Week 3	Day28		Week 4
(G1)	OD	Glu.(mM)	OD	Glu.(mM)	Glu.(mM)	OD	Glu.(mM)	Glu.(mM)	OD	Glu.(mM)	Glu.(mM)	OD	Glu.(mM)	Glu.(mM)
1	0.032	0	2.225	8.95240924	8.952409	5.96	24.360825	15.40842	7	28.6512541	4.290429	8.36	34.261815	5.6105611
2	0.039	0	1.06	4.14630363	4.146304	2.74	11.076997	6.930693	4.28	17.430132	6.3531353	5.86	23.948284	6.5181518
3	0.001	0	0.072	0.07039604	0.070396	0.254	0.8212211	0.750825	0.537	1.98871287	1.1674917	1.045	4.0844224	2.0957096
4	0.126	0.2931683	0.231	0.72633663	0.433168	0.405	1.4441584	0.717822	0.592	2.21561056	0.7714521	0.863	3.3335974	1.1179868
5	0.153	0.4045545	2.325	9.3649505	8.960396	6.88	28.156205	18.79125	10.58	43.420231	15.264026	15.04	61.819571	18.39934
6	0	0	0.01	0	0	0.032	0	0	0.035	0	0	0.046	0	0
7	0.42	1.5060396	0.821	3.16033003	1.65429	0.968	3.7667657	0.606436	0.86	3.32122112	-0.445545	0.84	3.2387129	-0.082508
8	0.054	0	0.153	0.40455446	0.404554	0.209	0.6355776	0.231023	0.226	0.70570957	0.070132	0.25	0.8047195	0.0990099
9	0.003	0	0.004	0	0	0.028	0	0	0.082	0.11165017	0.1116502	0.162	0.4416832	0.330033
10	0.005	0	0.009	0	0	0.021	0	0	0.027	0	0	0.033	0	0
11	0.007	0	7.72	31.6215512	31.62155	5.46	22.298119	-9.323432	9.7	39.789868	17.491749	12.34	50.680957	10.891089
12	0.005	0	0.036	0	0	0.175	0.4953135	0.495314	0.404	1.440033	0.9447195	0.5	1.8360726	0.3960396
13	0.007	0	0	0	0	0.002	0	0	0.009	0	0	0.015	0	0
14	0.008	0	0	0	0	0.002	0	0	0.003	0	0	0.004	0	0
15	0.006	0	0	0	0	0.009	0	0	0.031	0	0	0.057	0.0085149	0.0085149
16	0.009	0	0	0	0	0.001	0	0	0.001	0	0	0.002	0	0
17	0.008	0	0	0	0	0.021	0	0	0.051	0	0	0.079	0.0992739	0.0992739
18	0.002	0	0.45	1.62980198	1.629802	1.24	4.8888779	3.259076	2.14	8.60174917	3.7128713	2.96	11.984587	3.3828383
19	0.009	0	0.078	0.09514851	0.095149	0.372	1.3080198	1.212871	1.989	7.97881188	6.6707921	4.48	18.255215	10.276403
20	0.007	0	0	0	0	0.002	0	0	0.008	0	0	0.008	0	0

Table 7 The leakage amount of glucose concentration in group 2.

Sample No	Day1		Day7		Week 1	Day14		Week 2	Day21		Week 3	Day28		Week 4
(G2)	OD	Glu.(mM)	OD	Glu.(mM)	Glu.(mM)	OD	Glu.(mM)	Glu.(mM)	OD	Glu.(mM)	Glu.(mM)	OD	Glu.(mM)	Glu.(mM)
1	0.917	3.556370	1.075	4.208185	0.651815	1.18	4.6413531	0.433168	1.12	4.3938284	-0.247525	1.04	4.06379538	-0.330033
2	0.02	0	0.082	0.111650	0.111650	0.242	0.7717162	0.660066	0.375	1.320396	0.5486799	0.573	2.13722772	0.816832
3	0.052	0	0.058	0.012640	0.012640	0.059	0.0167657	0.004125	0.058	0.0126403	-0.004125	0.066	0.04564356	0.033003
4	0	0	0.033	0	0	0.065	0.0415182	0.041518	0.092	0.1529043	0.1113861	0.123	0.28079208	0.127888
5	0.018	0	0.03	0	0	0.035	0	0	0.045	0	0	0.047	0	0
6	0.058	0.01264	0.153	0.404554	0.391914	0.384	1.3575248	0.952970	0.531	1.9639604	0.6064356	0.676	2.56214521	0.598185
7	0.014	0	0.054	0	0	0.138	0.3426733	0.342673	0.224	0.6974587	0.3547855	0.391	1.38640264	0.688944
8	0.007	0	0.061	0.025017	0.025017	0.261	0.850099	0.825083	0.473	1.7246865	0.8745875	0.743	2.83854785	1.113861
9	0.739	2.822046	0.88	3.403729	0.581683	1.1	4.3113201	0.907591	1.16	4.5588449	0.2475248	1.52	6.0439934	1.485149
10	0.004	0	0.004	0	0	0.008	0	0	0.008	0	0	0.008	0	0
11	0.097	0.173531	1.08	4.228812	4.055281	4.18	17.017591	12.788779	6.92	28.321221	11.30363	10	41.0274917	12.70627
12	0.006	0	0.04	0	0	0.085	0.1240264	0.124026	0.129	0.3055446	0.1815182	0.171	0.47881188	0.173267
13	0.009	0	0	0	0	0.004	0	0	0.004	0	0	0	0	0
14	0.007	0	0.01	0	0	0.041	0	0	0.065	0.0415182	0.0415182	0.086	0.12815182	0.086634
15	0.007	0	0.002	0	0	0.051	0	0	0.096	0.1694059	0.1694059	0.12	0.26841584	0.09901
16	0.008	0	0	0	0	0.003	0	0	0.003	0	0	0.001	0	0
17	0.007	0	0	0	0	0.004	0	0	0.001	0	0	0	0	0
18	0.007	0	0	0	0	0.003	0	0	0	0	0	0	0	0
19	0.007	0	0	0	0	0.001	0	0	0.002	0	0	0	0	0
20	0.009	0	0	0	0	0.021	0	0	0.048	0	0	0.078	0.09514851	0.095149

Table 8 The leakage amount of glucose concentration in group 3.

Sample No	Day1		Day7		Week 1	Day14		Week 2	Day21		Week 3	Day28		Week 4
(G3)	OD	Glu.(mM)	OD	Glu.(mM)	Glu.(mM)	OD	Glu.(mM)	Glu.(mM)	OD	Glu.(mM)	Glu.(mM)	OD	Glu.(mM)	Glu.(mM)
1	0.391	1.38640264	2.985	12.0877228	10.70132	9	36.9020792	24.81436	10.76	44.1628053	7.260726	13.3	54.6413531	10.47855
2	1.215	4.78574257	2.375	9.57122112	4.785479	2.94	11.9020792	2.330858	3.18	12.8921782	0.990099	3.62	14.7073597	1.815182
3	2.226	8.95653465	3.59	14.5835974	5.627063	7.08	28.9812871	14.39769	8.88	36.4070297	7.425743	10.3	42.2651155	5.858086
4	0.032	0	0.039	0	0	0.05	0	0	0.051	0	0	0.053	0	0
5	0.032	0	0.207	0.62732673	0.627327	3.12	12.6446535	12.01733	5.92	24.1958086	11.55116	9.3	38.139703	13.94389
6	0.025	0	0.162	0.44168317	0.441683	0.305	1.03161716	0.589934	0.396	1.4070297	0.375413	0.567	2.11247525	0.705446
7	0.013	0	0.217	0.66858086	0.668581	0.592	2.21561056	1.54703	0.887	3.43260726	1.216997	1.2	4.72386139	1.291254
8	0.021	0	0.602	2.25686469	2.256865	2.28	9.17930693	6.922442	3.74	15.2024092	6.023102	6.02	24.6083498	9.405941
9	0.001	0	0.001	0	0	0.002	0	0	0.009	0	0	0.011	0	0
10	0.001	0	0.138	0.34267327	0.342673	0.293	0.98211221	0.639439	0.501	1.84019802	0.858086	0.808	3.10669967	1.266502
11	0.007	0	0.044	0	0	0.622	2.33937294	2.339373	1.28	5.05389439	2.714521	1.26	4.97138614	-0.08251
12	0.006	0	0.043	0	0	0.294	0.98623762	0.986238	0.433	1.55966997	0.573432	0.534	1.97633663	0.416667
13	0.007	0	0.021	0	0	0.1	0.18590759	0.185908	0.232	0.73046205	0.544554	0.421	1.51016502	0.779703
14	0.003	0	0	0	0	0.001	0	0	0.002	0	0	0.002	0	0
15	0.009	0	0	0	0	0.003	0	0	0.005	0	0	0.005	0	0
16	0.009	0	0.001	0	0	0.152	0.40042904	0.400429	0.68	2.57864686	2.178218	1.28	5.05389439	2.475248
17	0.008	0	0	0	0	0.006	0	0	0.01	0	0	0.008	0	0
18	0.006	0	0	0	0	0.002	0	0	0	0	0	0	0	0
19	0.009	0	0	0	0	0.002	0	0	0	0	0	0	0	0
20	0.001	0	0	0	0	0.026	0	0	0.057	0.00851485	0.008515	0.094	0.16115512	0.15264

Table 9 The leakage amount of glucose concentration in Negative control group.

Sample No (G-neg.)	Day1		Day7		Day14		Day21		Day28	
	OD	Glu.(mM)	OD	Glu.(mM)	OD	Glu.(mM)	OD	Glu.(mM)	OD	Glu.(mM)
1	0.001	0	0	0	0.003	0	0	0	0	0
2	0.002	0	0	0	0.003	0	0	0	0	0
3	0.003	0	0	0	0.003	0	0	0	0	0
4	0.004	0	0	0	0.004	0	0	0	0	0
5	0.002	0	0	0	0.004	0	0	0	0	0

Table 10 The leakage amount of glucose concentration in Positive control group.

Sample No (G-positive)	Day1		Day7		Day14		Day21		Day28	
	OD	Glu.(mM)	OD	Glu.(mM)	OD	Glu.(mM)	OD	Glu.(mM)	OD	Glu.(mM)
1	0.147	0.379802	12.78	52.49614	90.4	372.71066	93.2	384.2618	96	395.813
2	0.108	0.218911	11.04	45.31792	50.6	208.51924	52.4	215.945	53.8	221.7206
3	15.34	63.05719	13.68	56.20901	108.2	446.143	114	470.0704	119.8	493.9978
4	3.48	14.1298	10.62	43.58525	24	98.783267	27.4	112.8097	29.8	122.7107
5	0.033	-0.0905	10.98	45.0704	36.5	150.35092	39.8	163.9648	39.8	163.9648

STATISTICS ANALYSIS

Table 11 Statistical analysis using SPSS of glucose leakage concentration

Statistics

Group			D1	D7	D14	D21	D28
Positive control	N	Valid	5	5	5	5	5
		Missing	0	0	0	0	0
	Mean		15.557142	48.535743	255.30142	269.41033	279.64135
	Median		.37980198	45.317921	208.51924	215.94498	221.72056
	Std. Deviation		27.230176	5.5098587	148.24519	151.62157	158.75111
	Range		63.057195	12.623762	347.35974	357.26073	371.28713
	Minimum		.000000	43.585248	98.783267	112.80967	122.71066
	Maximum		63.057195	56.209010	446.14300	470.07040	493.99779
	Percentiles	25	.10945545	44.327822	124.56710	138.38723	143.33772
		50	.37980198	45.317921	208.51924	215.94498	221.72056
		75	38.593498	54.352574	409.42683	427.16611	444.90538
Negative control	N	Valid	5	5	5	5	5
		Missing	0	0	0	0	0
	Mean		.00000000	.00000000	.00000000	.00000000	.00000000
	Median		.00000000	.00000000	.00000000	.00000000	.00000000
	Std. Deviation		.00000000	.00000000	.00000000	.00000000	.00000000
	Range		.000000	.000000	.000000	.000000	.000000
	Minimum		.000000	.000000	.000000	.000000	.000000
	Maximum		.000000	.000000	.000000	.000000	.000000
	Percentiles	25	.00000000	.00000000	.00000000	.00000000	.00000000
		50	.00000000	.00000000	.00000000	.00000000	.00000000
		75	.00000000	.00000000	.00000000	.00000000	.00000000

Table 12 Statistical analysis using SPSS of glucose leakage concentration

(Test distribution of data)

One-Sample Kolmogorov-Smirnov Test

Group			D1	D7	D14	D21	D28
Group1	N		20	20	20	20	20
	Normal Parameters[a,b]	Mean	.11018812	3.0085891	4.9626040	7.7827492	10.739871
		Std. Deviation	.34602547	7.3171726	9.0518643	13.653533	18.281578
	Most Extreme Differences	Absolute	.475	.340	.351	.328	.342
		Positive	.475	.325	.351	.328	.342
		Negative	-.375	-.340	-.292	-.284	-.278
	Kolmogorov-Smirnov Z		2.124	1.523	1.571	1.467	1.530
	Asymp. Sig. (2-tailed)		.000	.019	.014	.027	.019
Group2	N		20	20	20	20	20
	Normal Parameters[a,b]	Mean	.32822935	.61972935	1.4737294	2.1831205	3.0678284
		Std. Deviation	.98641546	1.4450035	3.9040220	6.3081775	9.0889970
	Most Extreme Differences	Absolute	.475	.437	.363	.365	.368
		Positive	.475	.437	.363	.364	.360
		Negative	-.370	-.334	-.353	-.365	-.368
	Kolmogorov-Smirnov Z		2.126	1.956	1.625	1.631	1.645
	Asymp. Sig. (2-tailed)		.000	.001	.010	.010	.009
Group3	N		20	20	20	20	20
	Normal Parameters[a,b]	Mean	.75643399	2.0289835	5.3875347	7.4735627	9.8988927
		Std. Deviation	2.2195437	4.4385490	10.312364	12.965150	16.514217
	Most Extreme Differences	Absolute	.483	.420	.366	.324	.365
		Positive	.483	.420	.366	.324	.365
		Negative	-.367	-.324	-.301	-.282	-.274
	Kolmogorov-Smirnov Z		2.162	1.880	1.638	1.449	1.634
	Asymp. Sig. (2-tailed)		.000	.002	.009	.030	.010

a. Test distribution is Normal.

b. Calculated from data.

Group 1 = final flushed with sterile water

Group 2 = final flushed with 2% CHX

Group 3 = final flushed with 2.5% NaOCl followed by 2% CHX

D1 = Day 1

D7 = Day 7

D14 = Day 14

D21 = Day 21

D28 = Day 28

Table 13 Statistical analysis using SPSS of glucose leakage concentration (NPar Tests; Kruskal-Wallis Test)

Descriptives

Statistics

Group			D1	D7	D14	D21	D28
Group1	N	Valid	20	20	20	20	20
		Missing	0	0	0	0	0
	Mean		.11018812	3.0085891	4.9626040	7.7827492	10.739871
	Median		.00000000	.03519802	.56544554	1.0728713	1.3203960
	Std. Deviation		.34602547	7.3171726	9.0518643	13.653533	18.281578
	Range		1.506040	31.621551	28.156205	43.420231	61.819571
	Minimum		.000000	.000000	.000000	.000000	.000000
	Maximum		1.506040	31.621551	28.156205	43.420231	61.819571
	Percentiles	25	.00000000	.00000000	.00000000	.00000000	.00000000
		50	.00000000	.03519802	.56544554	1.0728713	1.3203960
		75	.00000000	2.7776980	4.6083498	8.4460149	16.687558
Group2	N	Valid	20	20	20	20	20
		Missing	0	0	0	0	0
	Mean		.32822935	.61972935	1.4737294	2.1831205	3.0678284
	Median		.00000000	.00000000	.00838284	.09721122	.19828383
	Std. Deviation		.98641546	1.4450035	3.9040220	6.3081775	9.0889970
	Range		3.556370	4.228812	17.017591	28.321221	41.027492
	Minimum		.000000	.000000	.000000	.000000	.000000
	Maximum		3.556370	4.228812	17.017591	28.321221	41.027492
	Percentiles	25	.00000000	.00000000	.00000000	.00000000	.00000000
		50	.00000000	.00000000	.00838284	.09721122	.19828383
		75	.00000000	.08999175	.83050330	1.6236139	2.4559158
Group3	N	Valid	20	20	20	20	20
		Missing	0	0	0	0	0
	Mean		.75643399	2.0289835	5.3875347	7.4735627	9.8988927
	Median		.00000000	.00000000	.69127063	1.4833498	2.0444059
	Std. Deviation		2.2195437	4.4385490	10.312364	12.965150	16.514217
	Range		8.956535	14.583597	36.902079	44.162805	54.641353
	Minimum		.000000	.000000	.000000	.000000	.000000
	Maximum		8.956535	14.583597	36.902079	44.162805	54.641353
	Percentiles	25	.00000000	.00000000	.00000000	.00000000	.00000000
		50	.00000000	.00000000	.69127063	1.4833498	2.0444059
		75	.00000000	.65826733	7.4693234	10.932607	12.293993

The glucose leakage concentration obtained at each of the time intervals were compared between groups using the Kruskal-Wallis test.

NPar Tests

Kruskal-Wallis Test

Ranks

	Group	N	Mean Rank
D1	Group1	20	29.83
	Group2	20	31.30
	Group3	20	30.38
	Total	60	
D7	Group1	20	33.40
	Group2	20	27.35
	Group3	20	30.75
	Total	60	
D14	Group1	20	31.90
	Group2	20	26.40
	Group3	20	33.20
	Total	60	
D21	Group1	20	32.15
	Group2	20	26.25
	Group3	20	33.10
	Total	60	
D28	Group1	20	32.65
	Group2	20	26.08
	Group3	20	32.78
	Total	60	

Test Statistics[a,b]

	D1	D7	D14	D21	D28
Chi-Square	.173	1.505	1.880	1.914	2.000
df	2	2	2	2	2
Asymp. Sig.	.917	.471	.391	.384	.368

a. Kruskal Wallis Test

b. Grouping Variable: Group

Table 14 Statistical analysis using SPSS of glucose leakage concentration (NPar Tests; Friedman Test)

Comparison within the same specimen at each of time intervals was using Friedman test.

Group 1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles		
						25th	50th (Median)	75th
G1-D1	20	.1101881	.346025465	.000000	1.506040	.0000000	.00000000	.0000000
G1-D7	20	3.008589	7.317172557	.000000	31.62155	.0000000	.03519802	2.777698
G1-D14	20	4.962604	9.051864340	.000000	28.15620	.0000000	.56544554	4.608350
G1-D21	20	7.782749	13.653533109	.000000	43.42023	.0000000	1.07287129	8.446015
G1-D28	20	10.73987	18.281578187	.000000	61.81957	.0000000	1.32039604	16.68756

Friedman Test

Ranks

	Mean Rank
G1-D1	1.83
G1-D7	2.38
G1-D14	2.95
G1-D21	3.55
G1-D28	4.30

Test Statistics[a]

N	20
Chi-Square	47.263
df	4
Asymp. Sig.	.000

a. Friedman Test

Group 2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles		
						25th	50th (Median)	75th
G2-D1	20	.3282293	.986415463	.000000	3.556370	.0000000	.00000000	.0000000
G2-D7	20	.6197294	1.445003532	.000000	4.228812	.0000000	.00000000	.0899918
G2-D14	20	1.473729	3.904022016	.000000	17.01759	.0000000	.00838284	.8305033
G2-D21	20	2.183120	6.308177477	.000000	28.32122	.0000000	.09721122	1.623614
G2-D28	20	3.067828	9.088996983	.000000	41.02749	.0000000	.19828383	2.455916

Friedman Test

Ranks

	Mean Rank
G2-D1	1.95
G2-D7	2.35
G2-D14	3.03
G2-D21	3.53
G2-D28	4.15

Test Statistics[a]

N	20
Chi-Square	41.824
df	4
Asymp. Sig.	.000

a. Friedman Test

Group 3

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles		
						25th	50th (Median)	75th
G3-D1	20	.7564340	2.219543689	.000000	8.956535	.0000000	.00000000	.0000000
G3-D7	20	2.028983	4.438549035	.000000	14.58360	.0000000	.00000000	.6582673
G3-D14	20	5.387535	10.312364146	.000000	36.90208	.0000000	.69127063	7.469323
G3-D21	20	7.473563	12.965150434	.000000	44.16281	.0000000	1.48334984	10.93261
G3-D28	20	9.898893	16.514217435	.000000	54.64135	.0000000	2.04440594	12.29399

Friedman Test

Ranks

	Mean Rank
G3-D1	1.85
G3-D7	2.25
G3-D14	2.95
G3-D21	3.70
G3-D28	4.25

Test Statistics[a]

N	20
Chi-Square	50.032
df	4
Asymp. Sig.	.000

a. Friedman Test

Table 15 Statistical analysis using SPSS of the rate of glucose leakage concentration (Test distribution of data)

One-Sample Kolmogorov-Smirnov Test

group	TIME			glucose(mM)
group1	D1-D7	N		20
		Normal Parameters(a,b)	Mean	2.89840099
			Std. Deviation	7.310023159
		Most Extreme Differences	Absolute	.368
			Positive	.368
			Negative	-.346
		Kolmogorov-Smirnov Z		1.644
		Asymp. Sig. (2-tailed)		.009
	D7-D14	N		20
		Normal Parameters(a,b)	Mean	1.95401485
			Std. Deviation	5.907025420
		Most Extreme Differences	Absolute	.350
			Positive	.350
			Negative	-.320
		Kolmogorov-Smirnov Z		1.565
		Asymp. Sig. (2-tailed)		.015
	D14-D21	N		20
		Normal Parameters(a,b)	Mean	2.82014521
			Std. Deviation	5.129937748
		Most Extreme Differences	Absolute	.326
			Positive	.326
			Negative	-.262
		Kolmogorov-Smirnov Z		1.459
		Asymp. Sig. (2-tailed)		.028
	D21-D28	N		20
		Normal Parameters(a,b)	Mean	2.95712211
			Std. Deviation	5.022093573
		Most Extreme Differences	Absolute	.295
			Positive	.295
			Negative	-.273
		Kolmogorov-Smirnov Z		1.319
		Asymp. Sig. (2-tailed)		.062
group2	D1-D7	N		20

		Normal Parameters(a,b)	Mean	.29150000
			Std. Deviation	.908321900
		Most Extreme Differences	Absolute	.378
			Positive	.378
			Negative	-.374
		Kolmogorov-Smirnov Z		1.693
		Asymp. Sig. (2-tailed)		.006
	D7-D14	N		20
		Normal Parameters(a,b)	Mean	.85399995
			Std. Deviation	2.829702001
		Most Extreme Differences	Absolute	.436
			Positive	.436
			Negative	-.381
		Kolmogorov-Smirnov Z		1.950
		Asymp. Sig. (2-tailed)		.001
	D14-D21	N		20
		Normal Parameters(a,b)	Mean	.70939109
			Std. Deviation	2.507517818
		Most Extreme Differences	Absolute	.424
			Positive	.424
			Negative	-.351
		Kolmogorov-Smirnov Z		1.895
		Asymp. Sig. (2-tailed)		.002
	D21-D28	N		20
		Normal Parameters(a,b)	Mean	.88470792
			Std. Deviation	2.818397610
		Most Extreme Differences	Absolute	.368
			Positive	.368
			Negative	-.333
		Kolmogorov-Smirnov Z		1.644
		Asymp. Sig. (2-tailed)		.009
group3	D1-D7	N		20
		Normal Parameters(a,b)	Mean	1.27254950
			Std. Deviation	2.742854196
		Most Extreme Differences	Absolute	.387
			Positive	.387
			Negative	-.321
		Kolmogorov-Smirnov Z		1.731
		Asymp. Sig. (2-tailed)		.005
	D7-D14	N		20
		Normal	Mean	3.35855116

	Parameters(a,b)	Std. Deviation	6.509135796
	Most Extreme Differences	Absolute	.362
		Positive	.362
		Negative	-.303
	Kolmogorov-Smirnov Z		1.620
	Asymp. Sig. (2-tailed)		.011
D14-D21	N		20
	Normal Parameters(a,b)	Mean	2.08602805
		Std. Deviation	3.297637115
	Most Extreme Differences	Absolute	.304
		Positive	.304
		Negative	-.264
	Kolmogorov-Smirnov Z		1.359
	Asymp. Sig. (2-tailed)		.050
D21-D28	N		20
	Normal Parameters(a,b)	Mean	2.42533003
		Std. Deviation	4.125523470
	Most Extreme Differences	Absolute	.309
		Positive	.309
		Negative	-.272
	Kolmogorov-Smirnov Z		1.381
	Asymp. Sig. (2-tailed)		.044

Table 16 Statistical analysis using SPSS of the rate of glucose leakage concentration (NPar Tests; Kruskal-Wallis Test)

Descriptives

Statistics

				glucose(mM)
group1	D1-D7	N	Valid	20
			Missing	0
		Mean		2.89840099
		Median		.03519802
		Std. Deviation		7.310023159
		Range		31.621551
		Minimum		.000000
		Maximum		31.621551
	D7-D14	N	Valid	20

			Missing	0
		Mean		1.95401485
		Median		.11551155
		Std. Deviation		5.907025420
		Range		28.114686
		Minimum		-9.323432
		Maximum		18.791254
	D14-D21	N	Valid	20
			Missing	0
		Mean		2.82014521
		Median		.09089109
		Std. Deviation		5.129937748
		Range		17.937294
		Minimum		-.445545
		Maximum		17.491749
	D21-D28	N	Valid	20
			Missing	0
		Mean		2.95712211
		Median		.21465347
		Std. Deviation		5.022093573
		Range		18.481848
		Minimum		-.082508
		Maximum		18.399340
group2	D1-D7	N	Valid	20
			Missing	0
		Mean		.29150000
		Median		.00000000
		Std. Deviation		.908321900
		Range		4.055281
		Minimum		.000000
		Maximum		4.055281
	D7-D14	N	Valid	20
			Missing	0
		Mean		.85399995
		Median		.00206250
		Std. Deviation		2.829702001
		Range		12.788779
		Minimum		.000000
		Maximum		12.788779
	D14-D21	N	Valid	20

			Missing	0
		Mean		.70939109
		Median		.02075908
		Std. Deviation		2.507517818
		Range		11.551155
		Minimum		-.247525
		Maximum		11.303630
	D21-D28	N	Valid	20
			Missing	0
		Mean		.88470792
		Median		.09089109
		Std. Deviation		2.818397610
		Range		13.036304
		Minimum		-.330033
		Maximum		12.706271
group3	D1-D7	N	Valid	20
			Missing	0
		Mean		1.27254950
		Median		.00000000
		Std. Deviation		2.742854196
		Range		10.701320
		Minimum		.000000
		Maximum		10.701320
	D7-D14	N	Valid	20
			Missing	0
		Mean		3.35855116
		Median		.49518152
		Std. Deviation		6.509135796
		Range		24.814356
		Minimum		.000000
		Maximum		24.814356
	D14-D21	N	Valid	20
			Missing	0
		Mean		2.08602805
		Median		.55899340
		Std. Deviation		3.297637115
		Range		11.551155
		Minimum		.000000
		Maximum		11.551155
	D21-D28	N	Valid	20

			Missing	0
		Mean		2.42533003
		Median		.56105611
		Std. Deviation		4.125523470
		Range		14.026403
		Minimum		-.082508
		Maximum		13.943894

NPar Tests

Kruskal-Wallis Test

Ranks

group		TIME	N	Mean Rank
group1	glucose(mM)	D1-D7	20	38.90
		D7-D14	20	38.50
		D14-D21	20	41.10
		D21-D28	20	43.50
		Total	80	
group2	glucose(mM)	D1-D7	20	35.03
		D7-D14	20	42.65
		D14-D21	20	39.60
		D21-D28	20	44.73
		Total	80	
group3	glucose(mM)	D1-D7	20	33.45
		D7-D14	20	43.15
		D14-D21	20	43.43
		D21-D28	20	41.98
		Total	80	

Test Statistics[a,b]

group		glucose(mM)
group1	Chi-Square	.634
	df	3
	Asymp. Sig.	.889
group2	Chi-Square	2.209
	df	3
	Asymp. Sig.	.530
group3	Chi-Square	2.706
	df	3
	Asymp. Sig.	.439

a. Kruskal Wallis Test

b. Grouping Variable: TIME

NPar Tests

Kruskal-Wallis Test

Ranks

TIME		group	N	Mean Rank
D1-D7	glucose(mM)	group1	20	33.70
		group2	20	26.80
		group3	20	31.00
		Total	60	
D7-D14	glucose(mM)	group1	20	30.05
		group2	20	27.10
		group3	20	34.35
		Total	60	
D14-D21	glucose(mM)	group1	20	31.95
		group2	20	24.75
		group3	20	34.80
		Total	60	
D21-D28	glucose(mM)	group1	20	32.60
		group2	20	26.40
		group3	20	32.50
		Total	60	

Test Statistics[a,b]

TIME		glucose(mM)
D1-D7	Chi-Square	1.978
	df	2
	Asymp. Sig.	.372
D7-D14	Chi-Square	1.918
	df	2
	Asymp. Sig.	.383
D14-D21	Chi-Square	3.728
	df	2
	Asymp. Sig.	.155
D21-D28	Chi-Square	1.717
	df	2
	Asymp. Sig.	.424

a. Kruskal Wallis Test

b. Grouping Variable: group

BIOGRAPHY

Miss Chureerat Kanchanakaew was born on 5th of April 1977 in Songkhla. She graduated with D.D.S. (Doctor of Dental Surgery) from the Faculty of Dentistry, Prince of Songkla University in 2001, and became a dentist in Sawi Hospital, Chumporn, in 2001-2003, then working in Hadyai Hospital, Songkla, in 2004. She studied in a Master degree program in Endodontology at Graduate School, Chulalongkorn University in 2006.