

# 가

.

I.

가

bisbiguanide , 4

11, 12).

1-4).

가

13, 14),

chlorhexidine bisbiguanide

5).

가

15-19), lis-

terine 4

chlorhexidine

12, 20-23).

6-8).

11, 12).

, chewing gum, oral irrigator,

가

가

, blood root

9, 10).

sanguinarine

가

10가  
가

2 normalization period  
. normalization period 3  
disclosing

II.

, normalization period  
(baseline 2) baseline 1

1.

(CT ) 11 , (CH ) 12 ,  
(HT ) 11 , 3

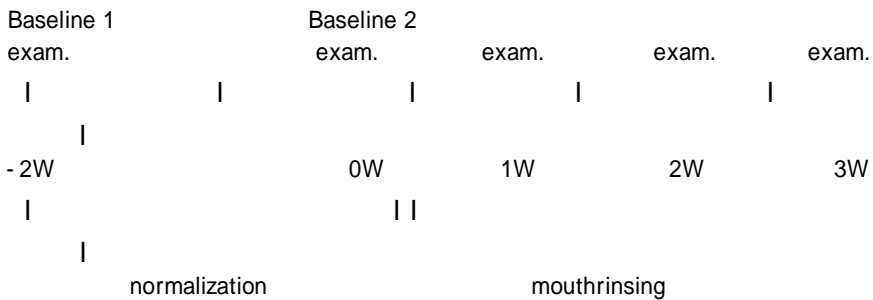
28 , 6 ) 34 ( CT  
, CH (0.1%, )  
23.3(±0.6) HT  
2 1 2 base -  
, line 1 , 3  
25 가 baseline 1

3mm

(2)

2.

(地骨皮), (藁本), (白芷),  
(細辛), (升麻), (川芎), (防風),  
(槐花), (甘草), (當歸)  
(1) ( 1) 4g/L , 100 °C 30



1. Outline of the study

(3)

2

curette

1% gelatin 0.3ml가

1cc

drug 1, drug 2 drug 3

가 1

slide

glass

cover glass

8 30

5

15ml

(Labophot Model

, 30

249849, Nikon Co. Japan) oil immer-

sion 1000

Listgarten Hellden<sup>29)</sup>

3

(4)

Baseline 1, Baseline 2( 0 ),

1 , 2 3

, 2

가

Löe Silness Gingival Index<sup>30)</sup>

4

Turesky Modification of Quigley - Hein

Index<sup>27)</sup>

Erythrosin

1

1

cotton roll

, air syringe

가

5

Periopaper(Interstate Drug Exchange Co., U.S.A.) Periotron

cotton roll

, air syringe

6000(Interstate Drug Exchange Co., U.S.A.)

가

2

curette

Eppendorf tube

Electronic analytical balance (Model

(5)

R200D, Sartorius Co. Germany)

<sup>28)</sup>.

Analysis of

1. Result from the Baseline 1 examination. N=Number of Subjects, S.D.=Standard Deviation, PII=Plaque Index, GCF=Gingival Crevicular Fluid, GI=Gingival Index

Group	N	PII	GI	GCF
		Mean ± S.D.	Mean ± S.D.	Mean ± S.D.
CT	11	1.49 ± 1.04	0.57 ± 0.35	17.64 ± 9.53
CH	12	1.54 ± 1.07	0.57 ± 0.39	18.50 ± 9.63
HT	11	1.28 ± 0.92	0.47 ± 0.34	14.36 ± 8.65

CT=Control, CH=Chlorhexidine, HT=Herbal Extract

PII	CT vs CH(p>0.2)	CT vs HT(p<0.05)	CH vs HT(p<0.05)
GI	CT vs CH(p>0.2)	CT vs HT(p<0.05)	CH vs HT(p<0.05)
GCF	CT vs CH(p>0.2)	CT vs HT(p>0.2)	CH vs HT(p>0.2)

## Variance

### 1. Baseline 1 examination

III.

45

2. Plaque Index(PII) calculated from measurements at Baseline 2(0 week), 1 week, 2 weeks, 3 weeks : overall Mean ± S.D.

	C T Mean ± S.D.	C H Mean ± S.D.	H T Mean ± S.D.
0 week	0.76 ± 0.84	0.88 ± 0.81	0.89 ± 0.93
1 weeks	3.37 ± 0.84	2.02 ± 0.88	3.30 ± 0.75
2 weeks	3.69 ± 0.78	1.90 ± 0.83	3.40 ± 0.86
3 weeks	3.64 ± 0.78	2.17 ± 0.63	3.64 ± 0.82

CT=Control, CH=Chlorhexidine, HT=Herbal Extract

0week	CT vs CH(p>0.05)	CT vs HT(p>0.05)	CH vs HT(p>0.2)
1week	CT vs CH(p<0.05)	CT vs HT(p>0.2)	CH vs HT(p<0.05)
2weeks	CT vs CH(p<0.05)	CT vs HT(p<0.05)	CH vs HT(p<0.05)
3weeks	CT vs CH(p<0.05)	CT vs HT(p>0.2)	CH vs HT(p<0.05)

3. Quantity of plaque in CT, CH and HT groups calculated from measurements made at 3 weeks : overall Mean ±S.D.

	Average Total Wet Weight(mg) Mean ± S.D.
CT	67.96 ± 36.9
CH	25.61 ± 14.85
HT	64.26 ± 23.39

CT=Control, CH=Chlorhexidine, HT=Herbal Extract

CT vs CH(p<0.05)	CT vs HT(p>0.2)	CH vs HT(p<0.05)
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0 (Baseline 2)

34

가

1 , 가 . CH CT  
 CT HT , 가 1 , 2 3  
 (p<0.05). 가 가 (p<0.05), CT  
 HT 2  
 가 (p>0.2)(  
 2). 2).

4. Mean percentage of bacterial morphotypes calculated from measurements made at 3 weeks : overall Mean ± S.D.

Bacterial Morphotypes	C T Mean ± S.D.	C H Mean ± S.D.	H T Mean ± S.D.
cocci(C)	50.03 ± 6.42	61.59 ± 2.78	51.78 ± 5.93
non - motile rods(N - MR)	20.80 ± 3.15	19.81 ± 2.75	19.58 ± 2.14
non - motile filaments(N - MF)	4.67 ± 1.34	3.90 ± 1.67	5.23 ± 2.04
motile rods(MR)	15.88 ± 5.30	10.80 ± 2.32	17.28 ± 4.80
motile filaments(MF)	1.70 ± 0.65	1.11 ± 0.58	1.98 ± 0.73
spirochetes(s)	6.92 ± 2.11	2.79 ± 0.73	4.14 ± 1.17

CT=Control, CH=Chlorhexidine, HT=Herbal Extract

C	CT vs CH(P<0.05)	CT vs HT(p>0.2)	CH vs HT(p<0.05)
N - MR	CT vs CH(p>0.2)	CT vs Ht(p>0.2)	CH vs HT(p>0.2)
N - MF	CT vs CH(p>0.2)	CT vs HT(p>0.2)	CH vs HT(p>0.05)
MR	CT vs CH(p<0.05)	CT vs HT(p>0.2)	CH vs HT(p<0.05)
MF	CT vs CH(p<0.05)	CT vs HT(p>0.2)	CH vs HT(p<0.05)
S	CT vs CH(p<0.05)	CT vs HT(p<0.05)	CH vs HT(p<0.05)

5. Gingival Index(GI) calculated from measurements made Baseline 2(0 week), 1 week, 2 weeks, 3 weeks : overall Mean ± S.D

	C T Mean ± S.D.	C H Mean ± S.D	H T Mean ± S.D
0 week	0.30 ± 0.27	0.33 ± 0.35	0.29 ± 0.31
1 weeks	0.83 ± 0.35	0.75 ± 0.36	0.75 ± 0.34
2 weeks	0.98 ± 0.34	0.79 ± 0.35	0.92 ± 0.32
3 weeks	1.06 ± 0.37	0.92 ± 0.39	0.92 ± 0.28

CT=Control, GH=Chlorhexidine, HT=Herbal Extract

0 week	CT vs CH(p>0.2)	CT vs HT(p>0.2)	CH vs HT(p>0.1)
1 week	CT vs CH(p<0.05)	CT vs HT(p<0.05)	CH vs HT(p>0.2)
2 weeks	CT vs CH(p<0.05)	CT vs HT(p<0.05)	CH vs HT(p<0.05)
3 weeks	CT vs CH(p<0.05)	CT vs HT(P<0.05)	CH vs HT(p>0.2)

가 (p<0.05), CH HT

3. 2  
 가 (p>0.2)( 5).  
 3 CH  
 CT HT  
 (p<0.05), CT HT  
 가 (p>0.2)( 3).  
 4. ,  
 가 HT  
 CT HT CH , CT 1 , 2 3  
 ,  
 가 (p<0.05), CT HT 3  
 가 (p>0.2)( 4).  
 5. (p>0.2) ( 6).  
 IV.

0 (Baseline 2)

가

( , , , , , , ) 가

가 . HT CT  
 1 , 2 3

6. Gingival Crevicular Fluid(GCF) calculated from measurements made at Baseline 2(0 week), 1 week, 2 weeks, 3 weeks : overall Mean±S.D.

	C T Mean ± S.D.	C H Mean ± S.D.	H T Mean ± S.D.
0 week	8.36 ± 4.64	11.54 ± 6.45	12.14 ± 6.70
1 week	32.50 ± 16.61	16.42 ± 10.02	22.82 ± 9.00
2 weeks	31.68 ± 9.08	19.63 ± 10.08	27.77 ± 11.44
3 weeks	36.27 ± 16.78	26.33 ± 6.90	28.23 ± 5.82

CT=Control, CH=Chlorhexidine, HT=Herbal Extract

0 week	CT vs CH(p>0.1)	CT vs HT(p>0.1)	CH vs HT(p>0.2)
1 week	CT vs CH(p<0.05)	CT vs HT(p>0.1)	CH vs HT(p>0.2)
2 weeks	CT vs CH(p<0.05)	CT vs HT(p>0.2)	CH vs HT(p>0.05)
3 weeks	CT vs CH(p<0.05)	CT vs HT(p<0.05)	CH vs HT(p>0.2)

가 , chlorhexidine 2 ,  
가 가 2 가가  
3  
10) , indomethacin,  
ibuprofen, flurbiprofen, naproxen  
가  
가 가 31 - 36) .  
가 가 37) ,  
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가 가  
가 가  
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dine , chlorhexi - 가 가  
10가  
가 가  
chlorhexidine in  
가 vitro  
가  
가 V.  
chlorhexidine

( , , ) 가 HT

3 (p<0.05), CH 가 (p>0.2).

7.

chlorhexidine 가

chlorhexidine 가

1. 3

2. CH CT HT  
1, 2 3  
(p<0.05), CT HT

2 가 (p>0.2).

3. CH CT HT  
(p<0.05), CT HT  
가 (p>0.2).

4. , CT HT CH  
(p<0.05), CT HT  
가 (p>0.2).

5. HT CT 1  
, 2 3 (p<0.05),  
CH HT 2  
가 (p>0.2).

6. HT CT  
1, 2 3

VI.

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## The Effects of the Mixture of Herbal Extract on Developing Plaque and Gingivitis

Sug - Rang Shin, Sung - Jo Kim

Department of Periodontology, College of Dentistry, Pusan National University

This double - blind controlled clinical and microbiological study was carried out to determine the effects of mouthwash preparation containing the mixture of herbal extract on developing plaque and gingivitis in the experimental gingivitis model. Following a 2 - week normalization period, 34 dental students were distributed randomly into 1 of 3 treatment groups. They rinsed, under supervision, two times daily for 3 weeks with either normal saline(CT), 0.1% chlorhexidine(CH), or the mixture of herbal extract (HT), but refrained from any oral hygiene measures.

The Plaque Index(PII), the Gingival Index(GI), and the amount of Gingival Crevicular Fluid(GCF) were measured at week 0, 1, 2, and 3 of the experimental period, while the assessment of total wet weight of plaque and the phase contrast microscopic examination of plaque were performed at the end of experimental period(3 weeks). Subjects using mouthrinse

preparation containing the mixture of herbal extract demonstrated negligible, if any, changes in the accumulation and microbial composition of plaque compared to those using normal saline, while the reduction of gingival inflammation by this mixture was highly significant and comparable to that of chlorhexidine. The results of this study indicate that the preparation containing the mixture of herbal extract do not provide any antiplaque benefits but is very effective in inhibiting the development of and in reducing existing experimental gingivitis when used as mouthrinse. Further research is needed to determine whether a significant reduction of gingival inflammation without a concomitant decrease in plaque accumulation is of clinical importance.

Key words: Herbal extract, Mouthrinse, Experimental gingivitis