

**"FREQUENCY OF USE OF CHLORHEXIDINE MOUTHWASHES
AND PLAQUE INHIBITION IN MAN"**

H. DANESHMAND

Introduction:

The correlation between plaque and gingivitis has been shown in studies by Loe (1961 and 1971), when he stated that bacterial plaque is the only direct cause of marginal gingivitis. The widely held view that dental plaque plays the major role in the development and perpetuation of gingival and periodontal inflammatory disease has led to a search for antibacterial agents which would inhibit plaque.

Early Chlorhexidine research by Davies et.al. (1954) demonstrated marked antibacterial activity of this agent against oral microorganisms. Short term human studies showed that daily mouthrinses of 0.2% Chlorhexidine gluconate even in the absence of mechanical oral hygiene, inhibited plaque development and gingivitis (Loe and Rindom Schiott, 1976 a,b Davies et.al. 1970).

Supra-gingival calculus formation was prevented (Schroeder 1969, Loe et.al. 1971). Heavy deposits of plaque gradually disappeared and marked chronic gingivitis was reduced in severity (Loe and Rindom

Schiott 1970^a). Gjermo and Rolla (1970, 1971) studied the plaque inhibiting effect of Chlorhexidine containing dentifrices, they found promising results from short term studies and concluded that they may well serve as vehicles for the active agent. Since the effects of frequency of administrations of Chlorhexidine mouthrinses on plaque inhibition merits further investigation, it would seem therefore justified to undertake an investigation, comparing the effects of once, twice and three times daily rinsing of Chlorhexidine gluconate mouthrinse on plaque and gingival condition.

Materials and Methods

The subjects in this investigation were thirty female students from School of Oral Hygiene (Tehran University). They were randomly selected and assigned to three groups of ten students. All the subjects in the three groups received a thorough dental prophylaxis prior to the investigation and were instructed to refrain from all other forms of oral hygiene during the mouthrinsing period. The three treatment groups were:

- Group 1. Once daily (morning) rinse with 10 ml. 0.2% Chlorhexi-^{*}dine gluconate mouthrinse for one minute
- Group 2. Twice daily (morning and evening) rinse with 10 ml. 0.2% Chlorhexidine gluconate mouthrinse for one minute.
- Group 3. Three times daily (morning, midday and evening) rinse with 10 ml. 0.2% Chlorhexidine gluconate mouthrinse for one minute.

After 10 days of rinsing, plaque and Gingival Index were recorded and the means for the three groups compared. The gingiva were scored according to the Gingival Index (GI.) of Loe and Silness (1963). Plaque were assessed according to plaque Index (Silness and Loe 1964).

* Chlorhexidine gluconate (I. C.I. macclesfield, England)

Results

The results of the investigation are assembled in Table 1.

N	Daily use	GI Index	Plaque Index
2	Once	0	0
8	Once	0	1
5	Twice	0	1
5	Twice	0	0
3	Thrice	0	1
7	Thrice	0	0

Means Plaque Index for the first group was 0.8 (Pl. I. = 0.8)

Means Plaque Index for the second group was 0.5 (Pl. I. = 0.5)

Means Plaque Index for the third group was 0.3 (Pl. I. = 0.3)

Means Gingival Index for three groups were 0 (GI=0)

Table 1. - showing the results of once, twice and three times daily rinsing with 10 ml. of a 0.2% Chlorhexidine gluconate mouthrinse.

In the present investigation 10 ml. of a 0.2% Chlorhexidine gluconate mouthrinse was used once a day for a group of ten volunteers for ten days, all were free of detectable gingival inflammation (GI = 0), and two out of ten exhibited no observable plaque by running a probe across the tooth surface (Pl. I. = 0), the remaining eight subjects showed slight amount of plaque mainly at the buccal and lingual surfaces of the posterior teeth (Pl. I. = 1)

The second group received 10 ml. chlorhexidine mouthrinse twice daily, GI Index for the whole group was zero (GI = 0) and five out of ten showed slight plaque mainly interproximally (Pl. I. = 1) whereas the other five subjects revealed no plaque (Pl. I = 0).

The third group (three times daily rinse) showed no gingival inflammation (GI = 0) whereas, the plaque for three out of ten was slight, lodged mainly interproximally (Pl. I. = 1) and the remaining seven volunteers revealed no presence of detectable plaque (Pl. I. = 0).

Statistical analysis of the results showed that there was no

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