

차이는 없었다. 7일간의 치근절편당 총유리량은 각각 145.6 $\mu\text{g}/\text{ml}$ 와 155.1 $\mu\text{g}/\text{ml}$ 였으며, 치근단 위면적당 유리량은 5.04 $\mu\text{g}/\text{mm}^2$ 와 5.49 $\mu\text{g}/\text{mm}^2$ 이었다.

2. 생체내 연구결과

50mg/ml와 100mg/ml tetracycline-HCl을 도포시술후 4일에는 각각 5.79 $\mu\text{g}/\text{ml}$ 와 6.54 $\mu\text{g}/\text{ml}$ 가 치은열구액내로 유리되어 대부분의 치주병인성 세균에 대해 유효농도를 유지했으며, 술후 6일에도 50mg/ml tetracycline 도포부위에서는 2부위에서, 100mg/ml tetracycline 도포부위에서는 3부위에서 4 $\mu\text{g}/\text{ml}$ 이상이 유리되었고, 두 도포수용액의 농도에 따른 차이는 술후 4시간까지는 100mg/ml 도포부위에서 측정치가 더 크게 나타났으며($p < 0.05$) 그 이후에는 차이가 없었다.

이상의 결과로 보아 tetracycline-HCl 수용액을 치근면에 국소도포시 치질내로 결합되어 장시간 유효항균농도를 유지하며 유리됨으로써, 전신적 항생제 투여없이도 외과적 치주치료를 결체조직의 신부착에 유용할 것으로 생각된다.

● 치주질환과 용해소체효소 : 치주질환 활성에 관한 실험적 연구

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실험적으로 치주염을 유발시킨 성견 4마리로부터 2주 간격으로 16주동안 소구치 협면에서 periotron unit, 치주낭 깊이(pocket depth), 치은 출혈지수(sulcus-bleeding index), 치태지수(plaque index)를 검사하였다. Brill 방법³⁾에 따라서 치은열구액을 채취하여 효소액을 용출시킨다음 Griffiths등의¹²⁾ 방법을 병행하여 arylsulfatase 활성을 비색법으로 측정하여 다음과 같은 결론을 얻었다.

1. arylsulfatase 활성치는 대조군에서 optical density의 평균값이 실험 16주에서 0.043 ± 0.015 , 0.22 ± 0.006 으로 통계적으로 유의한 차이를 나타내었다($P < 0.01$).
2. periotron unit, 치은출혈지수, 치태지수는 실험 2주부터 16주까지 계속적으로, 통계적으로 차이가 있었으나($P < 0.01$), 치주낭깊이는 실험 12주에서만 유의한 차이가 있었다($P < 0.01$).
3. 치주임상지수와 arylsulfatase 활성치간의 상관관계는 $SBI(r=0.291)$, $PI(r=0.240)$ 을 나타냈으나, 치주임상지수와 periotron unit와의 상관관계보다 $SBI(r=0.615)$, $PI(r=0.572)$ 는 낮은 상관계수로 나타났다($P < 0.01$).
4. 치주질환 활성은 arylsulfatase 활성치와 periotron unit를 측정된 결과 우발적인 양상을 나타냈다.

● 성견 치주질환시 치은 열구액내의 β -Glucuronidase에 관한 실험적 연구

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건강한 성견 4마리에 결찰사로 실험적 치주염을 야기한후, Brill의 방법에 따라 치은열구액을 채취하여 효소액을 용출시킨다음, dingle이 사용한 방법을 변형하여 β -glucuronidase의 활성을 비색법으로 측정하고, 각치아의 치주낭 깊이, 치은열구액 양, 치태지수 및 치은열구 출혈지수와

ycline released in distilled water was 7.32 μ g/ml and 6.18 μ g/ml at 48 hours and 13 μ g/ml and 1.42 μ g/ml at 7 days, respectively. The amount of desorption of tetracycline was 5.04 μ g/mm² respectively.

2. In vivo study

The concentration of tetracycline in gingival fluid was 5.79 μ g/ml and 6.54 μ g/ml at 4 days in 50mg/ml and 100mg/ml tetracycline sites respectively. In two sites of 50mg/ml tetracycline treated area and three sites of 100mg/ml tetracycline treated area. 4 μ g/ml of tetracycline treated area and three sites of 100mg/ml tetracycline area, 4 μ g/ml tetracycline treated area and three sites of 100mg/ml tetracycline treated area, 4 μ g/ml of tetracycline was desorbed still at 6 days.

This study indicates that the topical application of tetracycline-HCl results in substantial binding to tooth substance and slow release of effective tetracycline concentration for several days, and the effects of tetracycline may contribute to new attachment of connective tissue.

Lysosomal acid hydrolases and periodontal disease : experimental study on the activity of periodontal disease

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This study was undertaken to investigate the periodontal disease activity on 4 dogs which was induced experimental periodontitis by ligation the 3rd and 4th premolars of maxillas and mandible with wire. It is a meaningful approach to measure biochemical status as an indicator of periodontal disease activity. Arylsulfatase, a marker associated with tissue breakdown, was analysed from gingival crevicular fluid of dogs.

By the modification of the method of Griffiths, arylsulfatase was assayed spectro-photometrically and compared with clinical parameters such as periotron unit, PI, SBI, or PD.

The results of this study were as follows :

1. Average values of arylsulfatase activity (optical density) were statistically significant between the experimental (0.003 ± 0.015) and control (0.022 ± 0.006) site on the 16th week. ($P < 0.01$)
2. Periotron units, SBI and PI were statistically significant between experimental and control site from the 2nd week to the 16th week. ($P < 0.01$)
3. Correlation coefficients between arylsulfatase and clinical index was statistically significant, but less significant than that of PU clinical index.
4. It is suggested that the periodontal disease activity is episodic pattern according to arylsulfatase and periotron unit.