● 치주질환구 용해소체효소 : 치은 조직내의 β-glucuronidase에 관한 연구

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치주질환을 갖고 있는 27세~62세의 남녀 38명의 치은조직을 10~25mg정도 절제하여, Hasegawa와 Cimasoni(1985)의 방법에 따라 균질화 및 원심분리하여 세포질 추출물을 얻은 다음, Dingle(1972)의 방법을 변형하여 β-glucuromidase활성을 분광측정법으로 측정하고, 각 환자의 치주낭 깊이(Pocket depth)및 치은염지수(gingival index)와 비교하여 다음의 결론을 얻었다.

1. 치은조직내 β-glucuromidase의 총효소활성 및 유리효소활성치의 평균값은 각각 6.836±0.498, 6.373±0.453 liberated phenolp-hthalein mg/protein mg/hr로서 매우 낮은 latency를 나타내었다(6.8%).
2. 남녀별 β-glucuronidase활성 및 치주 임상지수는 뚜렷한 차이가 없었다.
3. PD의 정도에 따라 총효소 및 유리효소활성이 통계적으로 유의하게 증가되었으며(PD vs. 총효소, PD vs. 유리효소 : $P<0.01$), GI정도와 효소활성도 비슷한 관계를 나타내기는 하였으나 PD의 수준에는 못미쳤다(GI vs. 총효소, GI vs. 유리효소 : $P<0.05$).
4. 각 환자의 PD와 효소활성의 상관관계는 매우 높은 편이었으나(총효소, $r=0.652$: 유리효소, $r=0.647$), GI와 효소활성간에는 비교적 낮은 상관계수를 나타내었다(총효소, $r=0.432$: 유리효소, $r=0.385$).

● 치주질환과 용해소체효소 : 치은조직내의 acid phosphatase에 관한 연구

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치주질환을 갖고있는 27~62세의 남녀 30명의 치은조직을 10~25mg정도 절제하여 Hasegawa와 Cimasoni(1075)의 방법에 따라 균질화 및 원심분리하여 세포질 추출물을 얻은 다음, Vaes(1975)의 방법을 변형하여 acid-phosphatase활성을 분광 측정법으로 측정한 다음, 각 환자의 치주낭 깊이(pocket depth) 및 치은염지수(gingival index)와 비교하여 다음과 같은 결론을 얻었다.

1. 전체환자의 치은조직내 acid phosphatase의 총효소 활성치 및 유리효소 활성치의 평균값은 29.12±1.34, 19.80±0.94 liberated phenol mg/protein mg/hr로서 약68%의 높은 F/T ratio를 나타내었다.
2. 남녀별 치주임상지수 및 acid phosphatase의 활성도 모두 뚜렷한 차이가 없었다.
3. PD및 GI의 정도에 따라 총효소 및 유리효소 활성이 점차적으로 증진되었으며 가장 높은 grade에서는 모두 통계적으로 유의한 값의 변화를 나타내었고(PD. $p<0.001$: GI, $p<0.05$), 특히 총효소활성의 증가가 더욱 두드러져 F/T ratio는 오히려 감소되는 경향을 나타내었다.
4. 각 환자의 치주 임상지수와 효소활성의 상관관계는 총효소 활성이 유리효소 활성과의 경우보다 PD($r=0.643$), GI($r=0.681$)모두 높은 상관계수를 나타내었으며, 유리효소 활성에서는 GI($r=0.589$),가 PD($r=0.428$)와의 경우보다 높은 상관계수를 나타내었다.

Lysosomal acid hydrolases periodontal disease : A study on β-glucuronidase in human gingiva

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Given the cyclical, episodic pattern of periodontal disease activity, it seems logical to suggest that a meaningful approach to periodontal diagnosis would involve the measures of biochemical status of the periodontal tissues. β-Glucuronidase, for such a marker associated with tissue breakdown, was analyzed from gingival tissue of 38 periodontal patents aged 27~62 years.

Gingival tissues was removed from first molar area during periodontal surgery which was homogenized in 0.25M sucrose solution and then centrifused. By the modification of the method of Dingle(1972), β-glucuronidase was assayed spectrophotometrically from supernatant enzyme preparation, and compared with clinical parameters such as pocket depth or gingival index.

Mean value of total enzyme activity(latent fraction+active fraction)was 6.836+0.498, and free enzyme activity(active fraction only) 6.373+0.453 liberated phenolphthalein mg/protein mg/hr : that means the extremely low latency(6.8%) of β-glucuronidase in periodontal subject.

As the degree of pocket depth or gingival index increased, also free or total enzyme activities were increased accordingly, and above salient feature was especially singnificant in the relation between pocket depth and enzyme activity. The correlation coefficient between β-glucuronidase activity and pocket depth was hidden than respective value for gingival index : these results suggest that clinical assessment of inflammation by gingival index may be related to the size of inflammatory infiltrate with less degree of sensitivity.

Lysosomal acid hyddrolases and periodontal disease : A study on acid phosphatase in human gingiva

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We investigated 30 subjects showing varying degrees of periodontal disease who were aged 27~62 years. Gingival tissue was removed from nolar area during the elective periodontal surgery, which was immediately chilled in ice-cold 0.25M sucrose and then homogenized in same solution. The homogenate was centrifuged at 600xg for 10 min at ℃ and the supernatant removed as the enzyme preparation for study. Acid phosphatase activity was assayed spectro-photometrically by the modification of the method of Vaes(1965)and compared with clinical parameters such as pocket depth and gingival index.

Mean value of total enzyme activity(latent fraction+active fraction)was 29.12±1.34, and free enzyme activity(active fraction only) 19.80±0.94 liberated phenol mg/protein mg/hr : taht means the very low latency(32%)of acid phosphatase in periodontitis subject.