

## ● 혈소판 유래 성장인자가 치주조직의 재생에 미치는 영향에 관한 연구

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웅성 성견 5마리를 사용하여 인위적인 골결손과 고정용 고무밴드를 이용하여 치주염을 유발한 6주 후에 전형적인 만성 치주염을 보이는 3마리를 선택하여 하악 좌우측 제3, 4소구치 협측부위에 치은판막을 형성한 후 각 치근에 치근활택, 치근활택후 구연산 3분 도포, 치근활택후 platelet derived growth factor(PDGF) 5분 도포, 치근활택 및 구연산 3분 도포후 PDGF 5분간 재처리하여 실험 4주 후에 희생시켜 실험부위의 치아 및 치조골을 포함하는 부위를 절취하여 10% 중성 formalin 용액에 고정, 탈회, 포매, 박절한 후 백악질, 치주인대 및 치조골의 재생을 관찰하기 위한 H & E 증염색, 결합조직의 주행방향을 관찰하기 위한 Masson's trichrome 염색, 골의 형성양태를 관찰하기 위한 Koneff 염색을 실시한 후 광학현미경으로 관찰하여 다음과 같은 결론을 얻었다.

1. 접합상피의 치근단부 이동은 치근활택후 구연산처리군을 제외한 3군의 치근면 함요부에서 정지되었다.
2. 치근면에 대한 결합조직의 부착상은 구연산도포의 유무에 관계없이 PDGF 처리군에서는 잘 분화된 백악질아세포에 의해 치근면에 수직 배열되었으나, PDGF 미처리 군에서는 PDGF 처리군에 비해 백악질아세포의 분화가 미약하고 결합조직은 치근면에 수평배열되었다.
3. 접합상피측의 결합조직내에는 PDGF 처리군에서 미분화 결합조직세포와 염증세포가 매우 치밀하게 응집되었으나, PDGF 미처리에서는 미약하였다.
4. 치조골의 재생은 전군 공히 치조골의 조정에서 왕성하였다.

## ● 치은연하소파술과 치은박리수술 후 6개월간 치료효과에 대한 비교 연구

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치은연하소파술과 치은박리수술후 6개월간 치료에 대한 효과를 비교하기 위하여 21명의 치주염으로 진단된 환자에서 초진시 부착상실, 치주낭 깊이, 치태지수를 측정한 뒤 치은연하소파술과 치은박리수술을 시행하였다. 초진시 측정된 부착상실에 따라 초기(1-3mm), 중등도(4-6mm), 진행된 부착상실(7mm이상)로 군을 나누었다. 각 군마다 치석제거술 실시 4주후, 술후 1, 2, 3, 4, 5, 6개월에 부착상실, 치주낭 깊이, 치태지수를 관찰분석하여 다음과 같은 결론을 얻었다.

1. I군(부착상실 1-3mm) 환자의 부착상실은 치석제거술후 증가하였다가 치은연하소파술 1개월후부터는 유의성 있는 감소를 보인 반면 치은박리수술후 1개월후부터는 감소하다 술후 4개월부터는 증가하였으나 유의성은 없었다.
2. II군(부착상실 4-6mm) 환자의 부착상실은 치석제거술후 유의성 있는 감소를 보였으며 치은연하소파술과 치은박리수술후 모두 유의성있는 감소를 하였고 두 술식간 비교시 치은연하소파술에서 더 많은 부착상실의 감소를 보였다.
3. III군(부착상실 7mm이상) 환자의 부착상실은 치석제거술후 유의성 있는 감소를 보였으며 치은연하소파술과 치은박리수술후 모두 유의성있는 감소를 하였고 두 술식간 비교시 치은박리

## The effect of diphenylhydantoin on human gingival fibroblasts on culture

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The purpose of this study was to evaluate the effect of diphenylhydantoin on human gingival fibroblasts in culture.

Cell proliferation assay was performed to determine the effect of PHT on the DNA synthesis rate of human gingival fibroblasts by means of [<sup>3</sup>H]-thymidine incorporation method.

Protein synthesis assay was designed to detect the collagen production by [<sup>3</sup>H]-proline incorporation method.

The results were as follow :

1. In case of DNA synthesis, the contents of DNA were significantly increased more than the control group 1 $\mu$ g/ml : <0.05, 5 $\mu$ g/ml, 10 $\mu$ g/ml : p<0.01).
2. In case of collagenase-digestible protein synthesis assay, the contents of CDP were significantly increased on PHT 5 $\mu$ g/ml group compare to the control group(p<0.05), and PHT 1 $\mu$ g/ml, 5 $\mu$ g/ml group were increased but there were statistically not significant.
3. In case of noncollagenous protein synthesis assay, the contents of NCP were significantly increased on PHT 1 $\mu$ g/ml group(p<0.05), and PHT 5 $\mu$ g/ml, 10 $\mu$ g/ml, group were increased but there were statistically not significant.
4. The ability of collagenous-digestible protein synthesis was great increased than the cell proliferation.
5. The effects of PHT increasing the ability of collagen synthesis, were cell proliferation and increased of protein synthesis.

## Regeneration of periodontal tissue influenced by platelet derived growth factors application

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The purpose of the present study was to evaluate the effects of PDGF regeneration following treatment with citric acid (pH : 1) and PDGF topical application after root planing.

Inducing the experimental periodontitis with artificial defects and orthodontic elastic bands for six weeks in five adult dogs and performing the flap operation on the labial side of Lt. and Rt. 3rd, 4th bicuspid in three adult dog with tyypical chronic marginal periodontitis, the exposed root surfaces were planed with curettes and horizontal reference notch, across the root surface at the 1mm above of alveolar crest using a high speed bur under water cooling thereafter, each block divided into four groups.

1. Group of root planing.

2. Group of citric acid topical application (pH : 1, 3min.) after root planing.
3. Group of PDGF topical application (UBI, USA, 1 $\mu$ g, 5min.) after root planing.
4. Group of citric acid and PDGF topical application after root planing.

The flap were replaced and sutured with 3.0 silk needle, dressing were followed per two days and stitch out at 10 days after flap operation. Tissue block including the entire teeth and surrounding tissue were removed and sacrifice following 4 weeks of wound healing. All block specimen were fixed in 10% neutral buffered formalin during 24 hours and decalcified in 5% nitric acid 4 weeks and paraffin embedding, serial section, 5-7 microns in thickness, were prepared and stained with hematoxilin and eosin, Masson's trichrome, and Koneff's staining methods.

The result after observing through the light microscope was as follows :

1. A junctional epithelium went to the upper margin of the reference notch except to the group of citric acid application after root planing.
2. Whether or not citric acid demineralization was used, in the two groups of PDGF application, periodontal collagen fibers attached vertically to the root surface with well differentiated cementoblasts, but in the two groups without PDGF application, periodontal collagen fibers attached horizontally with flattened cementoblasts.
3. In the two groups of PDGF application, chronic inflammatory cells and undifferentiated mesenchymal cells infiltrated densely just beneath the junctional epithelium, but in the two groups without PDGF application showed a few undifferentiated mesenchymal cells and chronic inflammatory cells.
4. An active new bone formation were found on the crest of alveolar bone in the all group.

## Comparison of the clinical effect following subgingival curettage and flap operation over 6 months

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The purpose of this study was to evaluate the effect over 6months following subgingival curettage and flap operation.

This study was carried out on 21 individuals with periodontitis. During the phase of active treatment and for the subsequent 6months of healing, the patients were subjected to "professional toothcleaning" once every 1month

The subjects were separated into three groups on the basis of initial loss of attachments. These were consisted of group I(loss of attachment 1 to 3mm), group II (loss of attachment 4 to 6mm), and group III(loss of attachment >7mm)

Probing depths, loss of attachment, plaque index were recorded on baseline, 4 weeks after scaling and instructions in oral hygiene measures and 1, 2, 3, 4, 5, 6month after treatments. All data were analyzed statistically.