

절제임을 제시하며, 이와 같은 헤파린의 면역조절작용은 헤파린의 노출시기, 노출량, 대상세포 및 immunological parameters별로 상이할 수 있음을 시사한다.

● 치주질환 진단을 위한 치은열구온도의 이용에 관한 연구

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치주질환의 활성도와 예후를 평가하는데는 객관적인 방법이 필요하므로, 염증의 활성에 의한 조직의 온도상승에 착안하여 본 연구는 치주조직의 파괴가 없는 치주적으로 건강한 사람과 치주조직의 파괴 및 치주낭이 존재하는 치주질환 환자에서 치은열구온도를 측정, 비교하여 치주질환 진단의 새로운 방법으로 사용될 수 있는지 평가하기 위해 시행하였다.

전신적으로 건강하고 과거 6개월 이내에 치주치료를 받은적이 없으며 항생제 복용의 경험이 없는 사람을 대상으로 하였으며, 치주적으로 건강한 사람 10명에게는 치석제거술 및 치근면평활술을 시행한 다음 철저한 구강위생 교육을 실시하고, 2주후에 설하온도를 측정하고 각 치아의 근심협측부, 원심협측부, 근심설측부, 원심설측부, 총 1096부위에서 치은열구온도, 치은출혈지수, 치은열구 깊이를 측정하였고, 전반적으로 치주조직의 파괴가 있고 5mm이상의 치주낭이 10개 이상의 치아에 있는 치주질환 환자 7명에게는 어떠한 처치도 시행하지 않았으며 총 728 부위에서 동일한 임상계수를 같은 방법으로 측정하였다. 개인간의 차이를 보상하기 위해 설하온도를 측정하였고, 설하온도에 대한 차이를 산정한 후 비교하여 다음과 같은 결과를 얻었다.

1. 설하온도는 치주적으로 건강한 사람에서 $36.5 \pm 0.2^\circ\text{C}$, 치주질환 환자에서는 $36.6 \pm 0.2^\circ\text{C}$ 로 차이가 없었다.
2. 치주적으로 건강한 사람의 치은열구온도는 구치부가 전치부보다 4.3°C ($P < 0.01$), 하악이 상악보다 2.0°C 더 높았으며 ($P < 0.01$) 치은열구의 출혈이 있는 경우가 없는 경우보다 높았다.
3. 치주질환 환자의 치은열구온도는 치주적으로 건강한 사람에서의 유사한 부위별 온도차이를 나타냈고 치은열구 깊이의 증가, 출혈 및 화농에 따른 치은열구온도의 상승을 보였다.
4. 치주적으로 건강한 사람과 치주질환 환자의 비교에서는 치주질환 환자의 전치부가 건강한 사람의 전치부보다 1.2°C ($P < 0.01$) 그리고 치주질환 환자의 상악이 건강한 사람의 상악보다 0.9°C 더 높았다 ($P < 0.05$).
5. 치은열구 깊이가 3mm이하인 부위의 치은열구온도는 치주질환 환자에서 치주적으로 건강한 사람에 비해 전치부는 1.0°C , 구치부는 0.3°C 더 높았다 ($P < 0.01$).

이상의 결과로서 치주질환 부위의 치은열구온도가 치주적으로 건강한 부위보다 더 높다는 것은 질환활성도 증가로 인한 온도 상승으로 생각되며, 치은열구온도의 측정은 치주조직 상태의 평가 및 진단의 활용법으로 이용할 수 있을것으로 생각된다.

is an acidic glycosaminoglycan of 12,000–21,000 mol. wt. Heparin was released in vivo from mast cells and basophilic leucocytes during inflammatory reactions. Aside from retarding binding of coagulation proteins, fibronectin, complements, and growths. Heparin has also been shown to possess immunoregulating activity. Thus, recent data emphasize the immunomodulatory effects of heparin. But, the effect of heparin as a immunomodulator which has been found to exert both positive and negative activities according to the reporters, is yet controversial.

This experiment was undertaken to explore and to further confirm these paradoxical influence of heparin in immune response such as delayed-type hypersensitivity (DTH) to T-dependent antigen, antibody production to T-dependent (sheep erythrocytes, SRBC) and T-independent (polyvinylpyrrolidone, PVP) antigens, mitogenic responses of human and murine mononuclear cells (MNC), T cells and B cells, and proliferation responses of some kind of tumor cell lines.

Daily single injection of heparin (5 µg/mouse) for 4 days prior to sensitization responses to SRBC, but augmented antibody production against PVP. However, when heparin injected for 4 days post antigen, heparin significantly decreased the DTH and antibody response to SRBC, but it did not influence antibody responses to PVP.

These in vivo results indicated that heparin may exert a dual action on the in vivo immune system, enhancing or suppressing immune response by antigens and immune parameters.

In vitro heparin generally decreased the proliferation responses of phytohemagglutinin (PHA)-activated human tonsillar MNC and T cells at high dose, but increased that responses at low dose. The proliferation responses of PHA-activated or unactivated splenocytes from in vivo heparin-treated mice was remarkably higher than those if cells from heparin-untreated mice, and in vitro heparin decreased the proliferation responses of Lewis lung carcinoma cells (3LL cells) and this inhibitory effect of heparin was more stronger at low dose (less than 1 µg/ml) than at high dose. However, the proliferation responses of mouse myeloma cell line (NS-1 cells) was increased at higher dose (more than 10 µg/ml) but decreased at lower dose (less than 1 µg/ml). All these in vitro results suggested that in vitro immunomodulating effects might be manifested as positive or negative by dose- and cell-dependent manner.

Taken together, this present study revealed that heparin itself multiple effects on events controlling immune responses in a dose-, time-, species- and stimulant-dependent manner.

Use of gingival sulcus temperature as a diagnostic parameter in periodontics

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The purpose of present investigation was to evaluate the gingival sulcus temperature as a diagnostic parameter in assessing activity of periodontal disease.

This study included the periodontally healthy subjects (mean age : 26 years old) after scaling & root planing and the 7 periodontally diseased patients (mean age : 39 years old). Both groups were systemically healthy. Four sites (MB, DB, ML, DL) on each tooth were measured : 1096 sites in the healthy

subjects and 728 sites in the diseased patients. Sublingual temperature was measured to compensate for subject to subject variation in core temperature.

1. The sublingual temperature was within physiologic range in both periodontally healthy subjects and diseased patients.
2. In the periodontally healthy subjects, the gingival sulcus temperature was 4.3°C higher in posterior teeth than anterior (P<0.01) and 2.0°C higher in mandibular teeth than maxillary teeth (P<0.01).
3. In the periodontally diseased patients, the gingival sulcus temperature was 3.5°C higher in posterior teeth than anterior teeth (P<0.01). The increase of pocket depth and presence of sulcus bleeding and/or suppuration was associated with the higher temperature.
4. The gingival sulcus temperature of anterior teeth and maxillary teeth in the periodontally diseased patients was 1.2°C (P<0.01) and 0.9°C higher (P<0.05) than those in the periodontally healthy subject, respectively.
5. The gingival sulcus temperature of periodontally healthy sites (probing depth less than 3mm) was higher in the periodontally diseased patients than in the periodontally healthy subjects.

The results suggest that the elevated sulcus temperature observed in the diseased state, compared to the norm, would reflect the increase of inflammatory activity and its measurement can provide a diagnostic indicator in periodontics.

A study of the effect of NaF iontophoresis on the dentinal hypersensitivity induced by the root planing

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The aims of this study were to evaluate the efficacy of NaF iontophoresis in the treatment of dentinal hypersensitivity induced by the root planing to determine whether its effect is mediated through surface occlusion of dentinal tubules and to compare the root surface morphology of hypersensitive and nonsensitive teeth.

The data were obtained from 45 teeth of 16 patients, of which 24 were hypersensitive and 21 were nonsensitive after root planing. The root surfaces were examined by a scanning electron microscopic replica technique.

The following results were obtained :

1. After NaF iontophoresis, there was immediate desensitization in 19(79%) of 24 hypersensitive teeth. Five(21%) teeth were desensitized with second iontophoresis ; retreatments were spaced one week apart.
2. The counts of dentinal tubules were decreased after iontophoresis but this was not statistically significant. The diameters also were decreased, and this was statistically significant (P<0.05).
3. Twenty one(88%) out of the 24 hypersensitive teeth and 9(43%) out of the 21 nonsensitive teeth had exposed tubules. In hypersensitive the counts of tubules were more numerous than