

치주염 환자에서 보다 유의하게 높게 나타났다($P < 0.0905$).

3. 혈청 IgA의 평균치는 급속 진행성 치주염 환자에서 $294.8\text{mg}/100\text{ml}$ 로써, 정상인 및 성인형 치주염 환자에서 보다 다소 낮게 나타났으나, 통계학적 유의한 차이는 없었다.
4. 혈청 IgM의 평균치는 급속 진행성 치주염 환자에게 $124.4\text{mg}/100\text{ml}$ 으로써, 각각 정상인에서 보다 유의하게 높았다. ($P < 0.01$, $P < 0.005$).
5. 혈청내의 보체 C_3 와 C_4 의 농도는 급속 진행성 치주염 환자에서 각각 $88.2\text{mg}/100\text{ml}$ 와 $24.9\text{mg}/100\text{ml}$ 였으나, 정상 및 성인형 치주염 환자의 평균치와 통계학적인 유의한 차이가 없었다.

따라서, 급속 진행성 치주염 환자에서는 혈청 IgG의 평균 농도가 성인형 치주염과 정상인에 비하여 유의하게 증가되었으며, 혈청 IgM의 평균농도에서는 정상인에 비해서만 유의하게 증가되었다. 그러나 C_3 , C_4 의 평균농도에서는 유의한 차이가 없었다.

● 치주질환 병인균의 길항작용과 Bacteriocin 유사물질의 특성에 관한 연구

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치주질환의 진행에서 몇몇 병인균과 정상 상주균간의 상호 성장억제 작용이 질환의 진행 및 정지와 밀접한 관계가 있다는 보고가 구강생태학적 연구를 통하여 발표되고 있다.

본 연구는 이러한 치주질환 병인균과 구강상주균인 *S. mutans* 및 *S. sanguis* 균주들의 상호 성장억제를 관찰하고, 이들이 분비하는 Bacteriocin 유사물질의 특성에 관하여 연구하고자 stab 배양법을 이 억제제를 관찰하고, 이들이 분비하는 Bacteriocin 유사물질의 특성에 관하여 연구하고자 stab 배양법을 이용하여 producer 균주와 indicator 균주로 상호 교차실험을 실시하였다. 또한 치주질환 병인균에 대해 강한 성장억제 작용을 보여준 *S. mutans* OMZ 65 균주의 초음파 파절 추출물과 배양상층액을 얻어 이들의 성장억제 효과를 diffusion법에 의해 확인하고, 이 중 배양상층액을 gel filtration에 의해 분획을 얻은 후, 성장억제 분획을 취하여 이 물질의 분자량을 SDS-PAGE에 의해 관찰하여 다음과 같은 결론을 얻었다.

1. *B. gingivalis*, *B. intermedius*, *A. actinomycetemcomitans* 균주간에는 서로간에 비교적 약한 성장억제를 보여주었다. 그러나 *B. intermedius*는 균주에 따라 *B. intermedius*는 균주에 따라 *B. gingivalis* W50에 대해 중등도의 성장억제를 보여주었다.
2. *S. mutans* 균주는 *B. gingivalis* 및 *A. actinomycetemcomitans* 균주에 대해 강한 성장억제를 보여주었으며 *B. intermedius* 균주에 대해서는 약하게 나타났다. 반면, *S. sanguis* 균주는 *S. mutans* 균주들에 비해 약한 성장억제 효과를 보여주었다.
3. *S. mutans* 균주는 *S. sanguis* 균주에 비해 한국인에서 분리한 *A. actinomycetemcomitans* 균주에 대해 강한 성장억제 작용을 보여주었다. 그러나 *A. actinomycetemcomitans* 분리 균주의 *S. mutans* 및 *S. sanguis* 균주에 대한 성장억제는 거의 관찰되지 않았다.

4. *A. actinomycetemcomitans* 분리 균주는 *B. gingivalis*에 대해서 약한 성장억제를 보여주었다.
5. *S. mutans* OMZ 65 균주의 배양 상층액을 ammonium sulfate로 처리하고, gel filtration에 의하여 분획을 얻은 후, 성장억제 분획을 SDS-PAGE에 의해 분자량을 측정된 결과 36kd로 관찰되었다.

이상과 같은 연구결과는 각 균주간에 Bacteriocin에 의한 구강생태학적 변화 가능성과 구강 상주균주의 Bacteriocin에 의한 치주질환 병인균의 억제 가능성을 내포하며, 치주질환 치료에 이들을 적용하기 위해서는 이에 대한 보다 많은 연구가 필요한 것으로 생각된다.

of serum immunoglobulin(IgG, IgA and IgM) and C₃ and C₄ complement levels in rapidly progressive periodontitis patients.

Twenty-five patients with adult periodontitis, thirty-three patients with rapidly progressive periodontitis and twenty-two control subjects with normal periodontal tissue were participated in this study.

Blood samples were collected 5 ml from median cubital vein in forearm of each persons. The sample was immediately centrifuged and supernatant fluids were collected.

Serum concentrations of immunoglobulins and complements were assayed by Laser Nephelometer (Hyland Co., U.S.A).

The results were as follows :

1. By hematologic findings in the rapidly progressive periodontitis patients somewhat high distribution of WBC and increase of monocyte in one patient and increase of eosinophil in one patient were observed. But there was no significant difference in the mean of these hematologic findings among three groups.
2. The mean of serum IgG levels of rapidly progressive periodontitis patients was 1456.9mg/100ml and it was significantly higher than those of normal subjects and adult periodontitis patients($p < 0.005$).
3. The mean of serum IgA levels of rapidly progressive periodontitis patients was 294.8mg/100ml And it was slightly lower than those of normal subjects and adult periodontitis patients but the differences were not significant.
4. The mean of serum IgM levels of rapidly progressive periodontitis patients and adult periodontitis patients was 135.7mg/100ml, 124.4mg/100ml each other and each of those was significantly higher than those of normal subjects($p < 0.01$, $p < 0.005$).
5. The concentrations of serum C₃ and C₄ complement levels of rapidly progressive periodontitis patients were 88.2mg/100ml and 24.9mg/100ml independently, but the differences with those of normal subjects and adult periodontitis patients were not significant.

Thus, the mean concentrations of serum IgG levels were significantly increased in rapidly progressive periodontitis patients when compared with normal subjects and adult periodontitis patients, and those of serum IgM levels were significantly increased only when compared with normal subjects.

Inhibitory spectrum of periodontopathic microflora and characterization of bacteriocin-like substance

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In a complex ecosystem such as periodontal pocket, bacterial pocket, bacterial antagonism may be a determinant in oral colonization and compositional changes of periodontopathic microflora. This study was performed to examine the growth inhibitory activities among the periodontopathic and indigenous bacteria, *S. mutans* and *S. sanguis*, and the characteristics of bacteriocinlike substance.

The growth inhibitory activity was examined both as producers and as indicators by the stab culture method. Inhibitory activities of cell sonicate and culture supernatant of *S. mutans* OMZ 65, which showed broad and strong inhibition against periodontopathic bacteria, was examined by the diffusion method. The purification of the positive growth inhibitory fraction by gel filtration and the measurement of molecular weight by SDS-PAGE were performed.

The results were as follows.

1. *B. gingivalis*, *B. intermedius* and *A. actinomycetemcomitans* strains showed weak or no inhibition against homologous and heterologous strains. But two among four strains of *B. intermedius* showed moderate inhibition against one strain of *B. gingivalis*.
2. The strains of *S. mutans* showed broad and strong inhibition against *B. gingivalis* and *A. actinomycetemcomitans* strains and moderate inhibition against *B. intermedius*, but *S. sanguis* strains showed weaker growth inhibitory spectra than *S. mutans* strains.
3. *S. mutans* strains showed broader inhibitory spectra against *A. actinomycetemcomitans* Korean strains than *S. sanguis* strains. But *A. actinomycetemcomitans* Korean strains rarely showed growth inhibition against *S. mutans* and *S. sanguis*.
4. *A. actinomycetemcomitans* Korean strains showed weak inhibition against *B. gingivalis* strains.
5. The molecular weight of the positive growth inhibitory fraction of *S. mutans* OMZ 65 culture supernatant by SDS-PAGE was about 36 kd.

The effect of topical application with chlorhexidine and anti-inflammatory drug containing gel on dental plaque and gingival inflammation

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The purpose of this study was to evaluate whether there is any difference in the effect of inhibition of dental plaque and gingival inflammation between chlorhexidine & anti-inflammatory drug containing gel(Hi-paradent®) and placebo gel.

49 human subjects with the mild marginal gingival inflammation were selected for the study. This study was performed according to the double blind method. Following a baseline examination, the experimental gel were handed out to the subject and the topical application regimens were initiated. During the 8-week experimental period, each subject continued to exercise their regular non-supervised, self-performed plaque control procedures and topical application with 0.5g of the experimental gel twice daily for the first 4 weeks Before(day 0), during(day 14) and after(day 28,56) treatment, the plaque index(Silness & Loe), gingival index(Loe & Silness) and extrinsic stain index were examined.

The obtained results were as follows :

1. There was significant difference between placebo and chlorhexidine and anti-inflammatory drug containing gel(Hi-paradent®) in the reduction of plaque index($P < 0.01$).
2. There was also significant difference in the reduction of gingival index($P < 0.01$)