

● 급성진행성 치주염 환자의 치은연하 치태내 black-pigmented Bacteroides 균주의 분포에 관한 연구

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한국인 급성진행성 치주염 환자의 치태내 black-pigmented Bacteroides의 분포에 관한 연구를 위하여 급성진행성 치주염으로 진단된 20-35세 전후의 환자 17명과 대조군으로 동일 연령으로 치은염증이 $SBI \leq 1$ 인 7명을 택하여 염증도, 치주낭 깊이를 조사한 후 상악 제1대구치 및 중절치를 택하여 paper-point를 이용하여 치은연하치태 세균을 채취한 후 pre-reduced ringer액에 혐기성 조건으로 보관, 운반하여 37°C 혐기성 세균 배양기 내에서 pre-reduced된 혈액배지에 담아 7일간 배양하여 분리한 후 생화학적 검사를 통하여 Bacteroides 균주의 검정을 실시하였던 바 다음과 같은 결과를 얻었다.

1. 급성진행성 치주염 환자군에서 호기성세균은 전체 분리, 배양균주의 12.5%를 차지하였고 혐기성 세균은 87.5%를 차지하였다. 또한 이 87.5%의 혐기성 세균중 33.2%는 black-pigmented Bacteroides로 나타났으며 54.3%는 기타 혐기성 세균으로 나타났다. 한편 건강인에서는 호기성 세균이 전체의 56.9%를 혐기성세균이 43.1%를 차지하였으며 43.1%의 혐기성 세균중 5.5%가 black-pigmented Bacteroides로 나타났고, 기타 혐기성 세균이 37.6%로 나타났다.
2. 급성진행성 치주염 환자 17명의 치은연하 치태에서 분리된 black-pigmented Bacteroides 178균주를 각각 생화학적 검사를 통하여 검정하였던 바 87균주는 검정 가능하였고 91균주는 검정 불가능하였다. 87균주의 검정가능 균주의 분포는 B. gingivalis가 23균주로서 전체 분리균주의 4.29%를 차지하였고 B. intermedius가 28균주로 5.22%, B. melaninogenicus가 12균주로 2.24%, B. oralis가 11균주로 2.05%, B. loeschii가 7균주로 1.30%, B. socranskii가 3균주로서 0.56%, B. corporis가 3균주로서 0.56%를 나타냈다. 그러나 정상대조군 7명에서부터 분리, 배양된 51균주의 black-pigmented Bacteroides를 생화학적 방법으로 검정한 결과 검정가능 균주가 20균주였고 검정불가능 균주가 31균주였다.
검정가능 균주를 분석한 결과 B. gingivalis가 3균주로서 전체 분리균주의 0.33%였고, B. intermedius가 2균주로서 0.21%, B. melaninogenicus가 7균주로서 0.76%, B. socranskii가 2균주로서 0.21%, B. loeschii가 5균주로서 0.54%, 그리고 B. oralis가 1균주로서 0.11%를 차지하였다.
3. 급성진행성 치주염 환자중 임의로 선택한 중증환자 5명과 중등도 환자 3명에서 black-pigmented Bacteroides의 분포상태를 조사한 결과 중증환자의 경우 B. gingivalis가 46.43%를 차지하였고, B. intermedius가 28.5%로 나타났으며 B. melaninogenicus는 7.14% 순이었다.
그러나 중등도의 환자에서는 B. loeschii가 3균주로서 27.27%였고 B. socranskii가 3균주로 27.27%, B. melaninogenicus가 2균주로 18.18%를 차지하였고 B. gingivalis는 1균주 만이 나타났다.
4. 상기 실험 결과를 분석하면, 급성진행성 치주염시 black-pigmented Bacteroides는 전체 혐기성 세균의 약 34% 정도를 차지하며 정상대조군에서의 5%에 비해 큰 차이를 보이고 있다. 또한 급성진행성 치주염 환자의 경우 B. intermedius와 B. gingivalis가 많이 나타나나 정상대조군의 경우 B. melaninogenicus가 가장 많이 나타남으로 질환의 진행과 B. intermedius, B. gingivalis와의 깊은 관계가 있음을 알 수 있다.

dius, *B. loeschii* and *B. socranskii*, but ineffective to *B. melaninogenicus* and *B. oralis*. Further study should be needed for the investigation of the production of β -lactamase and other enzyme to clarify on the mechanism of bacterial resistance.

The proportions of black-pigmented bacteroides strains in subgingival plaque from patients with rapidly progressive periodontitis

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White et al(1981) reported in their experimental study that the mean anaerobic viable count ranged from 2.06×10^6 (GI*=0) to 2.09×10^7 cells (GI=3).

In this study, the mean anaerobic count of healthy control revealed 2.73×10^6 and R. P. P. patients showed 1.06×10^7 .

The mean anaerobic viable count data between White's and this study did not reveal any differences.

In this study, the mean anaerobic count of R. P. P. patients were almost 4 times higher than those of healthy control and mean SBI of patients with R. P. P. was 3, but in White's report, GI=3 was almost 10 times higher than those of GI=0.

The differences between those two data may be caused by sample selection technique or the condition of sample sites.

Ohta et al(1984) reported in their study of young advanced periodontitis that anaerobic bacteria comprised 78.8% from total count and black-pigmented *Bacteroides* was composed of 43.3% among total bacterial counts.

In our R. P. P. patients, anaerobic bacteria comprised 87.5% and black-pigmented comprised 33.2% from total bacterial count. The proportion of black-pigmented *Bacteroides* to total bacterial count in Ohta's data revealed higher than those of ours.

These results might be caused by the sample size and the differences between criteria of sample selection between Ohta's (N=5) and ours (N=17).

The one consistent results among White(1981), Ohta(1984) and ours were revealed that anaerobic bacteria were composed of around of 80% from total microflora of rapidly progressive periodontitis plaque and black-pigmented *Bacteroides* constitute a major part of the subgingival microbiota in sample sites with severe inflammation to compare with healthy sites.

In this study, the distribution of black-pigmented *Bacteroides* in rapidly progressive periodontitis showed that *B. gingivalis* was composed of one-quarter of total identified black-pigmented *Bacteroides* and *B. intermedius* was one-third of total identified black-pigmented *Bacteroides*.

The proportion of *B. gingivalis* was 4.29% and *B. intermedius* was 5.22% among total bacterial count and these data showed quite different from Ohta's and White's. The discrepancy of our data to compare with other's might be caused by the differences between criteria of sample selection.

As shown in table of this data, one-half of black-pigmented *Bacteroides* could not identified by biochemical test, further investigation is needed for identifying more completely.

Such problems also can be encountered in other laboratories and unidentified bacteria were comes out from 5 to 10% on each report(Moore 1982, Ohta 1984).

In this study, *B. intermedius* and *B. gingivalis* were the major microflora and they comprised over 50% of total black-pigmented *Bacteroides* in R. P. P. patients. On the contrary, in healthy control, *B. melaninogenicus* and *B. loeschii* were the major part of microflora and it's comprise around 60% among total black-pigmented *Bacteroides*, these data suggested that *B. melaninogenicus* and *B. loeschii* were closely related with healthy gingival condition, but these result contrasted with those found by White(1981).

These results suggested that *B. gingivalis* and *B. intermedius* play a role in the etiology of rapidly progressive periodontitis.

Mean proportions of black-pigmented *Bacteroides* between moderate and severe inflammation group among 17 R. P. P. patients showed significantly higher distribution of *B. gingivalis* in severe group(46.43%) that that of moderate group(9.09%) and these results indicated that *B. gingivalis* is important in periodontal infections involving inflammation and bone loss.(Tanner 1979, White 1981, Ohat(1984).

Slote(1977), Tanner(1979), and White(1981) reported that *B. gingivalis* was absent in crevices defined as healthy(GI=0), but, in or study, 3 strains of *B. gingivalis* among total 51 colonies were isolated and identified from healthy control.

Further study should be needed for clarifying of absent or present of *B. gingivalis* in healthy site.

One particular results in our study revealed that *B. loeschii* were 8.05% from total identified black-pigmented *Bacteroides* and were isolated 7 colonies among 87 of identified total black-pigmented *Bacteroides*.

Despite the face that several studies have shown the importance of *B. gingivalis*, *B. intermedius* and *B. melaninogenicus*, there was no report on the prevalence and toxicity of *B. loeschii*. Further investigation would be recommened on the relation between disease activity and change of the proportion of black-pigmented *Bacteroides*.

The study of the effects of polymeric reinforced zinc-oxide eugenol on the healing of furcation

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The purpose of the present investigation was to study the sequential effect of Polymeric-Reinforced Zinc-Oxide-Eugenol on the experimentally induced lesion of furcation area in the dogs.

Six dogs, 1year over age and weighting 12-20Kg were used.

By the method of orthodontic elastic thread ligature, 12weeks after, through and through furcation involvemtn was presented.

Dogs were randomly distributed into group of 1, 2, 3, 4, 5, 6week.

Polymeric-Reinforced Zinc-Oxide Eugenol was inserted into the furcation of upper and lower right