● 구강내 Actinobacillus actinomycetemcomitans 분리균주의 항생제 감수성에 관한 연구

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한국인 국소유년성치주염의 화학요법적 처치의 실용성과 효능을 증진시키기 위해 6명의 국소유년성치주염환자에서 분리 확인된 17개의 *A. actinomycetemcomitans*의 수종 항생제에 대한 감수성을 검사하였다.

감수성검사는 항생제 disk확산법과 한천배지 희석법을 이용하여 혐기성배양기내에서 시행되었으며 각각 억제 반경과 최소억제농도를 측정하여 감수성여부를 해독한 결과는 다음과 같다.

1. disk확산법검사에서 9 검사균주 모두가 Chloramphenicol과 Tetracycline에는 감수성을 보였으나, Clindamycin에는 내성을 보였다.
2. 한천배지 희석법검사에서는 Tetracycline에는 조건적인 감수성이 Minocycline, Doxycline에는 감수성이 나타났으며, Erythromcyin, Metronidazole, Neomycin과 Tobramycin 등에는 내성을 보였다.
3. 두 검사과정에서는 Penicillin계, Cephalothin계, aminoglycosid계 항생제에는 균마

● 치은연하 치태에서 분리된 Bacteriodes gingivalis의 혈청학적 이종성에 대한 연구

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Bacteroides gingivalis의 항원성 이종성을 연구하기 위하여 표준균주 B. gingivalis ATCC33277 및 381가 한국인 L.P.S.의 분자량, 혈청학적 특성을 연구하기 위하여 전기영동법, 면역확산법 및 면역전기영동법을 실시하였던 바 다음과 같은 결과를 얻었다.

1. 전기영동법을 이용한 B.gingivalis L.P.S.의 분자량 측정결과 Coomasie blue 염색법에서는 측정할 수 없었고 Sensitive silver atain법에서는 24Kd 부근에서 4종류 모두 염색되고 측정될 수 있었다.
2. 면역확산법 및 면역 전기영동법을 이용한 혈청학적 특성을 관찰한 결과 B.gingivalis 381 항 혈청에 대하여 B.gingivalis L.P.S.는 단일 침전반응을 보이나 B.gingivalis ATCC33277는 복합침전반응을 나타내며 한국인 B.gingivalis-1, L.P.S.는 B.gingivalis-2, L.P.S.는 B.gingivalis ATCC33277와 동일한 침전방응을 보이고 있으며 이러한 결과는 B.gingivalis균주중에는 혈청학적으로 약간 상이한 아종이 존재함을 나타내고 있다.

상기의 연구결과를 토대로 한국인 B.gingivalis에서 혈청학적으로 주종을 이루는 아종을 찾아내는 것이 중요한 과제이며 더 나아가서는 두 표준균주의 L.P.S.가 비록 혈청학적으로 약간의 상이항원이 존재하지만 두 균주의 L.P.S.중 공통 혈청항원을 추출하여 이에 대한 단일 clone항체를 생산할 수 있다면 동균주의 조기동정과 발견에 크게 도움이 되리라 생각된다.

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Specific role of anticapsular antibody to phagocytosis of *Actionobacillus actinomycetemcomitans* Y4 by polymorphonuclear

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Previous studies have demonstrated that *Actinobacillus actinomycetemcomitans* is important microorganism in the etiology of localized juvenile periodontitis. This bacterium have several pathogenic products to inbibit host defense mechanisms. Among the toxic materials, capsular polysaccharide exhibite resistance to phagocytosis from leukocyte and facilitate bacterial adherence to mucosal surfaces. This study was undertaken to investigate the role of anticapsular antibody to the phagocytosis of *Actinobacillus actinomycetemcomitans* Y_4 by PMNLs and its related function to facilitate on the elemination of this encapsulated bacterium from periodontally involved tissue and pocket. Capsular polysaccharide of AaY_4 was purified by phenol-water extraction, gel filtration. ethanol precipitation and nucleic acid elimination. Determination of molecular weight by SDS-polyacrylamide gel electrophoresis showed that three positive bands were detectable around 20, 24, 29 Kd, respectively. Anticapsular antibody was produced and purified by routine immunization and gel filtration procedures. The binding capacity of anticapsular IgG to AaY_4 was significantly higher than that of normal rabbit IgG and oxygen consumption rate of PMNLs phagocytosis to AaY_4 which was opsonized with anticapsular IgG, was significantly higher than that of normal rabbit IgG. (39.73 ± 2.23 : 28.41 ± 2.26n mol/min/1×10 cells) The study of intracellular ingestion capacity of PMNLs to AaY_4 by immunofluroescence microscopic examination showed that the difference between the numbers of the ingested AaY_4 which was opsonized with anticapsular IgG and normal IgG, was reached at statistically significant levels. (196.21 ± 12.14 : 135.32 ± 9.72/100PMNLs) These results revealed that anticapsular antibody of AaY_4 is effective for enhancing of PMNLs phagocytosis of encapsulated $AaYs_4$ and also can be available to use this system to eliminate this bacterium from infected periodontal tissue and pocket.

In vitro antibiotic susceptibility of oral *Actinobacillus actinomycetemcomitans* isolates

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Actinobacillus actinomycetemcomitan was isolated from the periodontal lesion of localized juvenile periodontitis and the suceptibility of a series of antibiotics for 17 *A. actinomycetemcomitans* isolates

was determined under anaerobic condition by agar dilution method and disk diffusion method. All *A. actinomycetemcomitans* isolates were susceptible to Chloramphenicol, Minocycline, and Doxycycline, and conditionally susceptible to Tetracycline. They were resistant to Clindamycin, Metronidazole, Erythromycin, Neomycin and Tobramycin.

The other antimicrobial agents were less active.

These data suggest that Tetracycline and its derivatives(and chloramphenicol) may be valuable drugs in the treatment of Korean localized juvenile periodontitis.

Serologic heterogenity of Bacteriodes gingivalis isolated from subgingival plaque

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For investigation on the antigenic heterogeneity within Bacteriodes gingivalis species, Bacteroides gingivalis ATCC33277 and Bacteroides gingivalis(Socransky) 381 (Kindlyprovided form R. J. Genco, SUNY at buffalo U. S. A)were obtained, cultured in BHI broth supplemented with 5ug/ml haemin ad 0.5ug/ml menadione for 3 days. Bacteroides gingivalis Korean-1 and Korean-w were isolated from different patients with rapidly progressive periodontitis and cultured in BHI broth supplemented with 5ug/ml haemin and 0.5ug/ml menadione for 3 days. Bacterial cells were harvested and washed three times in phosphate-buffered saline(PBS) at pH 7.2. Lipopolysaccharide were extracted according to Westphal and Jann by the hot phenol-water method. Electrophoresis, immunodiffusion and immunoelectrophoresis were performed for detection of molecular weight and serologic heterogeneity among the extracted lipopolysaccharides. Typical LPS band were observed around 24Kd molecular weght marker and LPS profiles of 2 Korean and 2 type strains of Bacteriodes gingivalis did not revealed with any disparity. B. gingivalis (Socransky) 381 and B. gingivalis korean-1 LPS were reacted and made a monospectific precipitin line with antisera to B. gingivalis (Sockansky) 381. On the Contrary, B. gingivalis ATCC33277 and B. gingivalis Koreann-w LPS were reacted without any monospecific percipition line. These results showed the evidence of serologic heterogeneity among LPS extracted from B. gingivalis and further study should the needed to clarify on the major serotypes of B. gingivalis isolated from Korean periodontitis patients.

Effects of cortisone and mechanical irritation on the periodontium of the a drenalectomized rats

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The present study was performed to investigate the effects of cortisone and mechanical irritation on the periodontium of the adrenalectomized rats.