R-26. Bacterial Invasion in Periodontium

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Staphylococcus aureus(*S. aureus*) is one of the important pathogens in acute oral infection, but the pathogenic mechanism of *S. aureus* is not fully understood. Some strains have particular pathogenic mechanism, which is the intracellular invasion. To investigate the bacterial invasion in periodontium, the invasion of *S. aureus* in epithelial cells and human gingival fibroblast cells was studied. The invasion of *S. aureus* was found to be time-dependent(0-60 min). That was increased linearly when an increasing number of bacteria were added to media(10^4-10^6 CFU/ml/well). However *S. aureus* Wood 46, which is deficient in protein A, was not increased. Cytochalasin B inhibited the invasion of *S. aureus* in epithelial cells. Cytochalasin D inhibited the invasion of *S. aureus* in human gingival fibroblast cells.

These results suggest that the pathogenic mechanism of *S. aureus* in periodontium may be associated with intracellular invasion, and interaction of staphylococcal protein A and cytoskeletal actin filament may be involved in the invasion to periodontium.