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牙周致病菌的共聚及其对人工牙根面黏附力的影响

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Coaggregation of periodontal pathogens and its effect on the attachment on artificial root surface

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摘要

目的 比较具核梭杆菌、牙龈卟啉单胞菌、中间普雷沃菌和伴放线嗜血菌等牙周病致病菌彼此之间的共聚力大小，观察四者在具核梭杆菌介导下对人工牙根面黏附力的影响，了解牙周生物膜结构中细菌间可能存在的相互作用。方法 目测具核梭杆菌、牙龈卟啉单胞菌、中间普雷沃菌和伴放线嗜血菌彼此间的共聚力，以放射性核素闪烁计数四者在具核梭杆菌黏附和未黏附状况下对胶原包被羟磷灰石（c-HA）的黏附间是否存在着差异。结果 具核梭杆菌、牙龈卟啉单胞菌、中间普雷沃菌和伴放线嗜血菌彼此间存在着共聚作用，其中，具核梭杆菌与牙龈卟啉单胞菌、牙龈卟啉单胞菌与中间普雷沃菌间的共聚度均可达4 度，具核梭杆菌与其他三菌间的共聚度均大于3 度。牙龈卟啉单胞菌、中间普雷沃菌和伴放线嗜血菌在具核梭杆菌黏附的状况下对c-HA 的黏附率高于其在具核梭杆菌未黏附时的黏附率，具核梭杆菌在未黏附的状况下对c-HA 的黏附率高于其在黏附后的黏附率。结论 具核梭杆菌、牙龈卟啉单胞菌、中间普雷沃菌和伴放线嗜血菌彼此间均存在共聚关系，具核梭杆菌可能对其他牙周病致病菌定植于牙菌斑起到了桥梁作用。

关键词： 牙周致病菌 共聚 黏附 胶原包被羟磷灰石膜

Abstract:

Objective The coaggregation abilities of 4 strains of periodontal pathogens Fusobacterium nucleatum （ F.nucleatum）, Porphytomonas gingivalis（P.gingivalis）, Prevotella intermedia（P.intermedia） and Haemophilus actinomycetemcomitans（H.actinomycetemcomitans） were compared. The changes of the ability of periodontal pathogens attaching to artificial root surface mediated by F.nucleatum were observed in order to investigate the possible interaction of the bacteria in periodontal biofilm. Methods The coaggregation degree among 4 strains of periodontal pathogens was investigated by a visual assay. Differences of the adherent percent of periodontal pathogens to collagen- coated hydroxyapatite（c-HA） under two conditions when F.nucleatum had already bond to c-HA and when F.nucleatum had not, were detected by radioisotope scintillation counter. Results The coaggregation among 4 studied strains was observed. The coaggregation degrees between F.nucleatum and P.gingivalis, as well as between P.gingivalis and P.intermedia reached 4. The coaggregation degrees of F.nucleatum with the other three bacteria were higher than 3. The adherent percent of P.gingivalis, P.intermedia and H.actinomycetemcomitans to c-HA when F.nucleatum had already bond to c-HA were higher than that when F.nucleatum had not. The adherent percent of F.nucleatum to c-HA when F.nucleatum had already bond to c-HA were lower than that when F.nucleatum had not. Conclusion The periodontal pathogens coaggregate. F.nucleatum may play a role as a bridge in the colonization of the other periodontal pathogens in the periodontal biofilm.

Key words： periodontal pathogens coaggregation adhesion collagen-coated hydroxy

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