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日 時: 2007 年 7 月 24 日(火) 16 時 00 分~17 時 30 分

場 所: 実習館 2 階総合歯科医学研究所セミナールーム

演 者: Prof. Lihong Ge 氏

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タイトル: “Study of multilineage differentiation potential of human dental pulp stem cells” and “ECC in China”

Human dental pulp stem cells have been paid a great deal of attention because of their unprecedented therapeutic merits endowed by powerful ex vivo expansion and multilineage differentiation potential. In order to learn the biological characteristics of dental pulp cells, we separated and cultured the pulp cells from young permanent teeth and anterior exfoliated deciduous teeth. Proliferation activity of the cells was recorded, and both cells were induced to differentiate into osteoblast, adipocyte, and neuron lineages. We also separated the pulp cells from anterior deciduous teeth from hypophosphatasia children, and compared the biological characteristics of cultured human DPSCs from deciduous teeth between hypophosphatasia and normal healthy children. In our study dental pulp cells can proliferate with high growth rate, and the cells showed the potential to differentiate into multiple mesenchymal lineages such as osteoblast, adipocyte, and neuron lineages in vitro. The proliferation, alkaline phosphatase expression and calcification capability of dental pulp stem cells are influenced in hypophosphatasia patients and this may be relevant to the tooth calcification defect.

With the improvement of Chinese education and living qualities, as well as the adoption of various preventive measures, the prevalence of dental caries in Chinese preschool children has dropped by 10% in the last 10 years according to the latest National census. We are going to share our experiences on caries prevention with pediatric dental colleagues. We have studied the relationship of ECC and temperament in children. The results suggested that ECC was correlated with the child's behavior and temperament. The affect of child's behavior and temperament on ECC should be considered in caries prevention. Our department has analyzed the factors influencing the colonization of Mutans Streptococci on tooth in infants and toddlers, and the relationship between dental caries and the time of initial colonization. The results showed positive correlation between MS colonization and dental caries. Effective methods on preventing early colonization of Mutans Streptococci in children's mouth could reduce the susceptibility of primary teeth to dental caries, in that achieve the aim of caries prevention. In China, the identical rate of MS genotype between children and mothers is less than 50%, which means there are non-mother sources for MS transmission. We have investigated the relationship between caretakers and MS transmission to young children. The results are very important for preventing ECC in China.