Cell morphological change and caspase-3 protein expression on epithelial cells under stimulation of oral bacterium streptococcus sanguinis

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Abstrak

Oral commensal bacterium Streptococcus sanguinis may find in periodontal lesions, deep seated infection, and infective endocarditis that are usually dominated by anaerobes. This bacterium caused cell death on some cells but host responses to this species remained unclear. Objective: This study was aimed to detect cell morphological
change and role of caspase-3 in cell death mechanism induced by S. sanguinis. Methods: HeLa cells as representative model for oral epithelial cells were exposed to 107 cells/ml bacteria for 48 h. Morphological change was observed microscopically after hematoxyline-eosin staining. Expression of active caspase-3 was examined by immunocytochemical analysis after cell stimulation for 36 and 48 h with wild type supragingival S. sanguinis. Doxorubicin (0.5625 μg/ml) was used as positive control for caspase-3 activation. Results: The results showed cell shrinkage of bacterial-treated cells; and active caspase-3 molecules were detected after 36 and 48 hours cell stimulation. Conclusion: This study would suggest cell shrinkage and caspase-3-dependent apoptotic cell death induced by S. sanguinis.