IL-1 may up-regulate the expression of IL-6 and ColIA1 mRNAs in the cells of dihydropyridine induced gingival

中文摘要

英文摘要

Nifedipine is a well known calcium channel blockers for treatment of hypertension and angina. The side effect as nifedipine-induced gingival overgrowth (NIGO) can be frequently found in clinic. NIGO cells, as stimulated by IL-1β, may elicit a stronger IL-6 expression and collagen production. Moreover, Akt phosphorylation was correlated to collagen overproduction. We propose a hypothesis that PI3K/Akt/NFκB pathway is one of the possible mechanisms which may be related to the over expression of IL-6 and overproduction of extra-cellular collagen in dihydropyridine induced gingival overgrowth (DIGO) cells. In this study, we will use western blot technique to detect the expression of Akt. Moreover, real-time PCR is utilized to explore the expression of IL-6 and collagen-I mRNA. Sircol dye assay was used to detect total collagen concentration. Finally, we will interpret the correlation of p-Akt/Akt, IL-6 and collagen by non-parametric Spearman correlation coefficient. Result revealed that by stimulating with IL-1β, the value of p-Akt/Akt ratio, the expression of IL-6 and collagen-I mRNA, and the concentration of IL-6 and collagen in supernatant were all increased. In addition to the expression of IL-6 mRNA, the other three factor described above were higher in DIGO group then in healthy group stimulated by IL-1β. Spearman correlation coefficient shows high relationship between the value of p-Akt/Akt, the expression of IL-6 and collagen-I mRNA, and the concentration of IL-6 in supernatant. The data mentioned above approve that Akt is in connection with gingival overgrowth.