

SEXUALLY TRANSMITTED INFECTIONS, HIV/AIDS

TEA POLYPHENOLS INDUCE APOPTOSIS AND DECREASE TELOMERASE ACTIVITY IN HPV16 SUBGENES IMMORTALIZED HUMAN CERVICAL EPITHELIAL CELLS.

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Background: High-risk type Human Pappiloma Virus (HPV) infection is related to carcinogenesis, such as HPV16. Green tea polyphenols (TP) was helpful in the management of HPV infection, such as genital warts. HPV16 Subgenes Immortalized Human Cervical Epithelial Cells (H8 cells) are the precancerous stage of HPV infection, which can be transformed into malignant squamous cell carcinoma under certain conditions.

Objective: To investigate the effect of TP on apoptosis and telomerase activity of H8 cells.

Materials and Methods: H8 cells were treated with different concentrations of TP(0, 12.5, 25ug/ml) for 24 hours, and cell apoptosis were analyzed using flow cytometry, apoptotic morphology observed under fluorescence microscopy after DAPI staining. Expression of apoptosis-associated proteins, such as Caspase3, Caspase9, Bax and Bcl-2, was detected by Western blot, the ratio of Bax/Bcl-2 will be calculated. Expression of HPV16 E6, HPV16 E7, P53, Rb protein was also investigated by Western blot assay. Telomerase repeat amplification detection was applied to detect the telomerase activity.

Results: TP at a concentration of 12.5 and 25ug/ml can increase the apoptotic rate of H8 cells. After incubated with different concentrations(12.5 and 25ug/ml) of TP for 24h, The expression levels of Caspase3 and Caspase9 protein were increased. Compared with the control group, the ratio of Bax/Bcl-2 increased after treatment of 12.5 and 25 ug/ml tea polyphenol (0.103 ± 0.005 , 0.118 ± 0.006 , both $p < 0.05$). The RTA values were decreased (5.037 ± 0.165 , 4.100 ± 0.162 , both $p < 0.05$). The expression of HPV16 E6 and HPV16 E7 protein decreased, while P53 and Rb protein expression increased.

Conclusion: TP may induces apoptosis and decrease telomerase activity of H8 cells by inhibiting the expression of E6 and E7 protein.