ADVERSE DRUG REACTIONS, INCLUDING SJS, TEN

IFN-γ AND TRAIL ARE POTENTIAL INDUCERS OF NECROPTOSIS IN HACAT CELLS THROUGH ACTIVATION OF ROS

Yanhong Shou [(1)] *- Yongsheng Yang* [(1)]

Fudan University /huashan Hospital, Dermatology, Shanghai, China [(1)]

Introduction: Necroptosis is a form of programmed cell death, which has only been partially studied in skin diseases.

Objective: To investigate cell viability, changes of necroptosis-related proteins and reactive oxygen species (ROS) generation in HaCaT cells treated with IFN-γ and TNF-related apoptosis-inducing ligand (TRAIL).

Materials and Methods: Detection of necroptosis and apoptosis was performed using the Annexin V-FITC apoptosis detection kit. HaCaT cells were cultured with 50ng/ml IFN-γ, 4ng/ml TRAIL, 50 μM of zVAD or 10 mM Nec-1 for 48h, the proteins were detected using an image analyzer. Production of ROS was detected by a Reactive Oxygen Species Assay Kit.

Results: zVAD enhances and Nec-1 attenuates IFN-γ and TRAIL-induced necroptosis in HaCaT cells, the levels of necroptosis-related proteins are changed. zVAD amplifies production of ROS, while Nec-1 diminishes it.

Conclusions: our results highlight that IFN-γ and TRAIL are potential inducers of necroptosis in HaCaT cells, which is enhanced by zVAD and inhibited by Nec-1. Necroptosis has been found to contribute to keratinocyte death in Stevens-Johnson syndrome/toxic epidermal necrolysis (SJS/TEN). It would be interesting to confirm that Nec-1 and other proteins are beneficial in the treatment of necroptosis-mediated skin diseases.