

عنوان مقاله:

Endoplasmic reticulum stress regulates inflammation in adipocyte of obese rats via toll-like receptors ۴ signaling

محل انتشار:

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خلاصه مقاله:

Objective(s): To explore whether endoplasmic reticulum (ER) stress regulates inflammation in adipose tissue of obese rats via TLR۴ signaling. Materials and Methods: Sprague Dawley rats were randomly divided into four groups, and body weight, food intake, and free fatty acids (FFA) were measured. Real-time PCR and Western blot were used to determine mRNA or protein expression of TLR۴, TRAF۶, IKKβ, TNF-α, IL-۶, and GRP۷۸. Immunohistochemistry was used to detect GRP۷۸ protein expression. Results: The FFA levels in HFD, HFD+PBA, and HFD+VIPER groups were higher than that in the control group ($P<0.05$). Compared with the control group, HFD induced GRP۷۸ expression significantly ($P<0.05$), which could be decreased by ER stress inhibitor but not by TLR۴ blocker. The mRNA expression of TLR۴, TRAF۶, TNF-α, and IL-۶, and protein levels of TLR۴, TNF-α, and IKKβ in the HFD group increased significantly compared with the control group ($P<0.05$), while these changes could be suppressed by PBA or VIPER ($P<0.05$). The immunohistochemistry staining indicated GRP۷۸ expression in the HFD group was higher than that of the control group, which could be inhibited by PBA or VIPER. Conclusion: HFD could induce inflammation in adipose tissue via ER stress and its downstream TLR۴ signaling.

کلمات کلیدی:

Adipocyte, Endoplasmic reticulum stress, Inflammation, Obesity, Toll-like receptor ۴

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