

عنوان مقاله:

The Protective Effect of Curcumin on the Proliferation and Colonization of Spermatogonial Stem Cells in Gamma-Irradiated Rats

محل انتشار:

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خلاصه مقاله:

Background & Objective: One of the side effects of radiotherapy can be damage to spermatogonial stem cells that may lead to spermatogenesis disorders and sterility. Protective effects of curcumin on normal cells against radiotherapy side effects have already been shown. In the current study, the protective effects of curcumin on the spermatogonial stem cells against gamma radiation were evaluated. **Materials & Methods:** This study was done on 50 adult rats in 10 experimental groups. Four groups were injected 0, 25, 50, or 100mg/kg of curcumin in 1ml olive oil for 15 days intraperitoneally, then exposed to radiation at 2 Gy on the next day. Also, four groups were treated like above but without radiation; and two groups as control with and without radiation. The day after radiation, all of the rats were euthanatized, their testes were removed, and they underwent enzymatic digestion to co-culture spermatogonial stem cells. After 12 days, the colonization of spermatogonial stem cells was assessed. **Results:** There was a significant decrease in the colonization of spermatogonial stem cell proliferation in groups that had taken radiation but not curcumin. There was a significant increase in the colonization of spermatogonial stem cells in the group which had taken radiation with maximum curcumin compared with the other irradiated groups and was similar to non-irradiated control animals. Colonization of spermatogonial stem cells in non-irradiated animals treated with curcumin had increased compared with control groups. **Conclusion:** Injection of curcumin can protect spermatogonial stem cells against radiation. Thus, curcumin may prevent sterility in men who undergo radiotherapy.

کلمات کلیدی:

Curcumin, Radiation therapy, Radiation protective agents, Spermatogonial stem cells, Sterility

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