

A novel dendritic cell therapy with oncothermotherapy mediated by abscopal effect

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Objective

The abscopal effect on the tumor is a distant antitumor activity induced by local treatments. The study was to observe the induction of abscopal effect by the combination of dendritic cell therapy with oncothermia therapy.

Methods

SCCVII (mouse squamous cell carcinoma) cells were injected into C3H/He mice at two separate sites, defined as a “primary” site that was treated and a “secondary” site outside the field of treatments. When both tumors were palpable, mice were randomly assigned to four groups receiving dendritic cell (DC) therapy or oncothermia therapy. The mice were treated with local intra-tumor injection of DCs combined 30 minutes heating at 42°C. Mice were followed for tumor growth.

Results

In the models tested, the combination of DC therapy and either fractionated oncothermia therapy regimens achieved enhanced anti-tumor response at the primary site. Moreover, an abscopal effect, defined as a significant growth inhibition of the tumor outside the field, occurred in mice treated with the combination of DC therapy and oncothermia therapy.

Conclusions

The abscopal antitumor effect could be induced by the combination of DC therapy and onthermia therapy and this new technique could be a new strategy for the treatment of squamous cell carcinoma.