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REFERENCES


eComment. Experimental controversy regarding the role of adipose-derived stem cells in surgical oncology

Authors: Eleftherios Spartalis, Dimitrios Dimitroulis, Charalampos Markakis and Periklis Tomos

2nd Department of Propaedeutic Surgery, University of Athens, Medical School, General Hospital “Laikon”, Athens, Greece doi: 10.1093/icvts/ivu224

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We read with great interest the article titled ‘Effects of human adipose-derived stem cells on the regeneration of damaged visceral pleural mesothelial cells: a morphological study in a rabbit model’ by Kim et al. [1] This well-designed study showed that adipose-derived stem cells (ASCs) can contribute to the treatment of alveolar air leak after pulmonary resection.

Cancer, however, is the first leading cause of lung surgery. Several reports have shown that the immunosuppressive capacity of ASCs may in some cases favour the growth of tumour cells, but contradictory results exist. Muelberg et al. [2] reported that ASCs in a murine model promote tumour growth in vivo, not only when injected to the tumour site, but also when injected intravenously. Recent reports have documented the ability of ASCs to induce the proliferation of active breast cancer cells in vitro and in vivo via paracrine mechanisms [3]. Conversely, Kucerova et al. [4] showed that cytokine deaminase-expressing ASCs deliver the cytokine deaminase transgene to the site of tumour formation and mediate a strong anti-tumour effect in vivo. Cousin et al. [5] reported that ASCs strongly inhibit proliferation of pancreatic ductal adenocarcinoma cells, both in vitro and in vivo by interfering with the proliferation of tumour cells and altering cell cycle progression. These contradictory results indicate that the work is far from done, and further consensual protocols are necessary to fully elucidate the true effect of ASCs on tumour excision sites.

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References


