Head & Neck Oncology

Poster presentation

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The use of specific anti-growth factor antibodies to abrogate the oncological consequences of transfusion: an in-vitro study

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Introduction

Peri-operative blood transfusion is associated with reduced prognosis in a number of solid malignancies. We investigate its role in a head & neck squamous cell cancer cell line. Growth of these cell lines was analogous to endothelial growth. Direct exposure to transfusion products exaggerated this effect. It was logical therefore to assess the effects of anti-endothelial antibodies on this interaction.

Materials and methods

Control (HUVEC) and tumour cell lines were exposed to transfusion products. The pre-incubation of the transfusion product with anti-endothelial growth factors was assessed by a growth assay.

Results

The antibody did not directly reduce growth in the tumour cell line, however there was a significant reduction ($p < 0.001$) in tumour cell line growth caused by transfusion products pre-incubation with anti-endothelial growth factor antibody. This was found in several other tumours.

Conclusion

We have shown some of the prognostically deleterious effects of peri-operative transfusion in head & neck cancer patients is caused by the transfusion products release of endothelial growth factors. This is found to be the case in several of the tumour groups (Colonic and Prostate) for which this phenomena has been previously reported. It can now be hypothesized that this is due to the specific expression of receptors to these growth factors in these tumour types which are not universally found. It would also explain why this phenomenon does not occur for all tumour types.