Immunoscintigraphy of patients with head and neck carcinomas, with an anti-angiogenetic antibody fragment

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OBJECTIVE: In a phase I/II clinical study, we investigated tumor targeting in patients with head and neck squamous cell carcinomas (SCC), using an antibody directed against the extra-domain-B of fibronectin (EDB), a marker of angiogenesis and tissue remodeling. STUDY DESIGN AND SETTING: Five patients with SCC were injected with the 123-iodine-radiolabeled L19(scFv)2 antibody and underwent scintigraphic detection with single photon emission tomography with computerized tomography (SPECT/CT). In addition, 18F-fluorodeoxyglucose (18FDG) positron emission tomography with computerized tomography (PET/CT) was performed. RESULTS: Successful targeting of the primary tumor could be achieved in 4 of 5 patients and was comparable to PET imaging. No side effects were observed. CONCLUSIONS: Tumor targeting with the L19(scFv)2 antibody is also feasible for head and neck SCC. SIGNIFICANCE: These results may serve as a base for future therapeutical applications in human beings, with modified versions of the L19(scFv)2 antibody, designed to selectively deliver bioactive molecules into malignant tumors.

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