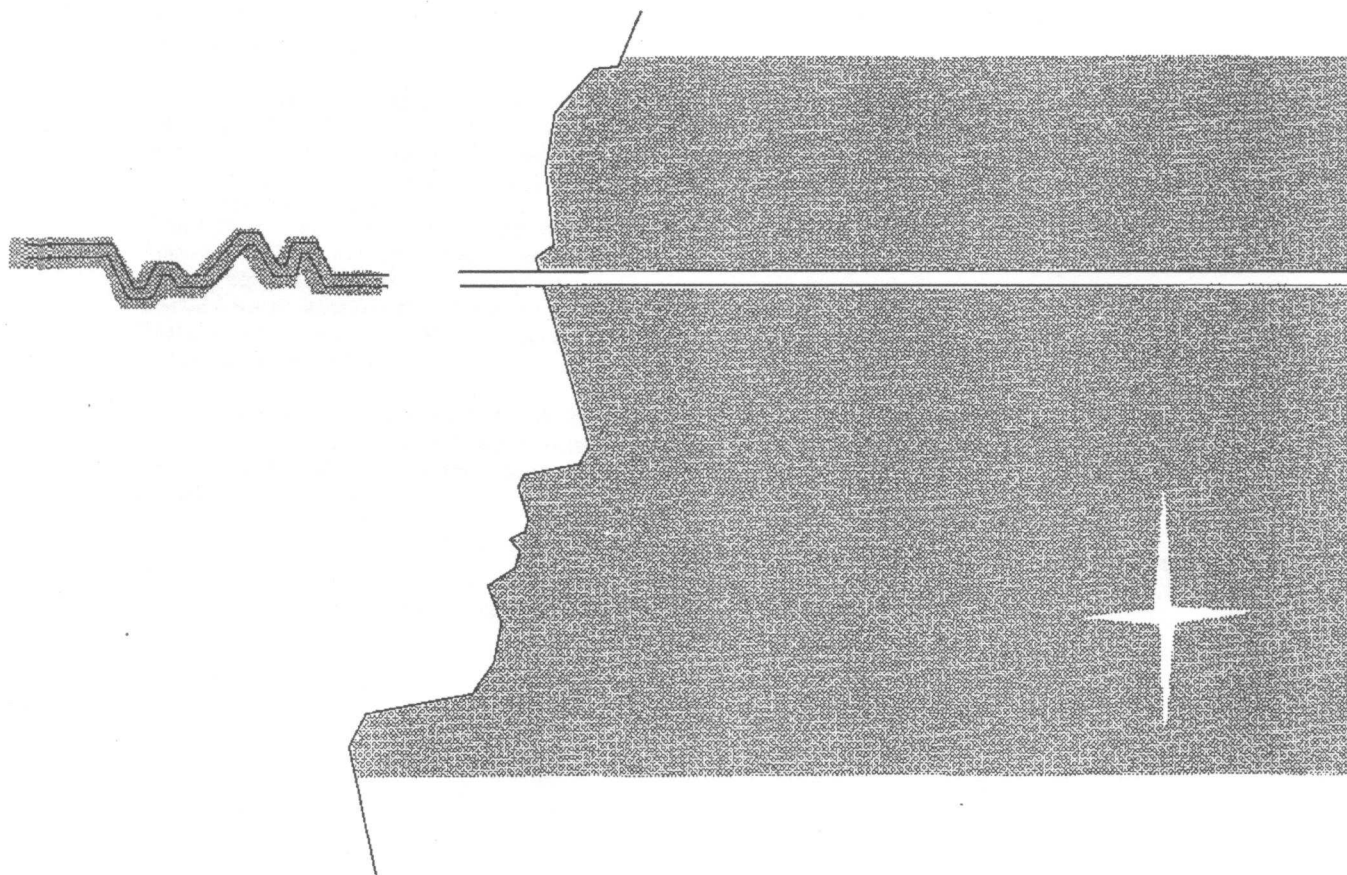


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Clinical Experience of Immunoscintigraphy in CEA-producing Tumours

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We used the murine monoclonal antibody BW 431/31 for radioimmunoscintigraphy in 37 patients. The intravenously administered amount of IgG was 0.5 mg (7 patients), 2 mg (11 patients) or 3 mg (19 patients). Either ¹¹¹In-DTPA (33 cases) or ¹³¹I (Iodogen method - 4 cases) was used for labelling of the antibody. 20 patients received F(ab')₂ fragments and 17 the whole IgG. Imaging was performed 24 and 48 hours after injection. We used ^{99m}Tc sulfur colloid for subtraction of reticuloendothelial radioactivity in 33 patients.

34 patients were evaluable for comparison with conventional exams and for follow-up : 23 patients had evolutive primary colorectal carcinoma, 1 with a record of colon carcinoma and a disease-free interval of 14 years with an elevated CEA, 9 patients had an elevated CEA (> 20 ng/ml) of unknown origin, one a pancreatic carcinoma.

Results of Immunoscintigraphy : The scintigrams showed tumour uptake in 18/23 (78 %) patients with colorectal carcinoma. In 7 patients, radioimmunoscintigraphy showed uptake of antibody despite chemo- or radiotherapy and this uptake was associated with a poor prognosis. We did not observe any tumour localization in the patient with record of colorectal tumour, elevated CEA and 14 years of DFS, nor in the patient with active pancreatic carcinoma.

Uptake in liver metastases was observed in 3 (37 %) out of 8 patients.

Among 9 patients with an elevated serum CEA level of unknown origin could scintigraphy with the labelled antibody not detect a site of abnormal uptake.

The CEA serum level was of no predictive value for tumour uptake.

Testis uptake could be seen in 21 (91 %) of 23 men, and the kidneys were clearly outlined in 20/37 patients, 18 of these 20 receiving F(ab')₂.

We also used the Monoclonal BW 431/26 labelled with ^{99m}Tc following Hoechst's method. The use of ^{99m}Tc clearly improves the quality of images, however, imaging must be performed within the next 24 hours after injection (of 20 mCi). A different serum clearance of radioactivity was observed with ^{99m}Tc-BW 431/26, compared to ¹¹¹In-BW 431/31.

We conclude that imaging using labelled anti-CEA antibodies gives frequently correct information on localization and activity of colorectal carcinoma. The search for the primary of a raised serum CEA level of unknown origin remains disappointing using these antibodies.