Diagnostic and treatment modalities in carcinoid tumours

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$^{131}$I-MIBG radionuclide therapy in carcinoid syndrome

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Reply to:

“\(^{131}\)I- MIBG radionuclide therapy is safe and cost-effective in the control of symptoms of the carcinoid syndrome”

(Pathirana et al., EJSO 2001; 27: 404-408)

In the June issue of the European Journal of Surgical Oncology, Pathirana et al. describe \(^{131}\)I-MIBG radionuclide therapy as a safe and cost-effective approach in the palliative treatment of carcinoid syndrome in 13 patients.\(^1\) These findings are in line with our experience as initially reported in 1996 in a series of 20 patients.\(^2\)

Selection of patients is based on positive \(^{131}\)I-MIBG scintigraphy as retention in the tumour deposits is needed for local radiation exposure. Although a majority of patients have a positive scan, 30% show only faint retention in liver metastases and are thus not candidates for the radioactive treatment.

We would like to draw attention to a method that achieved changes in biodistribution resulting in increased retention in tumour tissue and reduction in background activity. This enhancement of biodistribution can increase the number of patients eligible for the radioactive treatment.

During treatment with the unlabelled compound we observed that negative \(^{131}\)I-MIBG scintigraphy could change markedly into a positive scan. The unlabelled MIBG was administered in pharmacological doses according to a phase II trial, on the basis of the in vitro anti-tumour effect indicated by reduced mitochondrial respiration.\(^3\)

We evaluated the effect of predosing with non-radiolabelled MIBG in carcinoid patients with a negative scan.\(^2,4,5\) In 21 out of 24 patients, the biodistribution resulted in an improved tumour:non-tumour ratio.\(^5\) Among 10 cases with an initially weak retention in the liver metastases, pre-treatment with non-radiolabelled MIBG resulted in a positive scan in six patients. Five of them were subsequently treated with the combination of labelled and non-labelled MIBG.\(^3\) Severe toxicity did not occur. Long-lasting symptomatic improvement occurred in all, and in three this was accompanied by a biochemical partial remission (reduction of 5-HIAA excretion of more than 50%) during approximately one year. Improvement in biodistribution was also found in similar predosing experiments in carcinoid xenografted mice.\(^2\)

The unlabelled MIBG is safe and simple to apply in 4-hour infusion in dosages of 10-20 mg/m\(^2\); it is also relatively cheap compared with the radioactive compound. In conclusion, more patients may qualify for the \(^{131}\)I-MIBG treatment as a result of pre-dosing with unlabelled MIBG.
1-MIBG therapy

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