

Introduction: Octreotide in oncology

Somatostatin is a tetradecapeptide that is widely distributed throughout the body, particularly in the nervous system, gastro-intestinal tract, pancreas and thyroid gland. Somatostatin acts as an inhibitor of hormone release from the pituitary and pancreas, and also inhibits the release of gastrointestinal hormones. Other activities include immuno-modulation, cytokine production and inhibition of cell growth.

Somatostatin has, therefore, a wide range of potential uses in oncology, and also in other disciplines, particularly endocrinology. The short duration of action of somatostatin limited its clinical use. The synthesis of octreotide, an analogue of somatostatin with a more favourable pharmacokinetic profile and duration of biological activity has enabled a variety of indications to be explored.

In oncology, octreotide has potential in disease staging, symptom control and management of liver metastases.

Radio-labelled octreotide is being evaluated in imaging a wide variety of tumours and to identify patients for octreotide therapy alone or in combination with cytotoxic treatment. The therapeutic use of radio-labelled octreotide is a possibility in the management of neuroendocrine and somatostatin receptor-positive small-cell lung cancer.

Octreotide has a well established role in controlling the symptoms of flushing and diarrhoea

in patients with the carcinoid syndrome, and markedly improves the quality of life for this group of patients. Intestinal obstruction is a very distressing complication of disseminated abdominal malignancy. Symptomatic improvement has been shown with octreotide. It is thought to be mediated by a pro-absorptive effect on the small bowel mucosa and by improving gastrointestinal motility.

Diarrhoea related to cancer treatment with chemotherapy/radiotherapy, or other therapeutic complications such as graft versus host disease after an allogeneic bone marrow transplant, have been improved with octreotide. The role of octreotide in the control of liver metastases is unproven in man, although there is laboratory evidence of activity both *in vitro* and *in vivo*. This is particularly so for micrometastases, and clinical studies are indicated.

I am grateful to the authors for reviewing in detail the many and varied actions of octreotide in oncology, and look forward to the results of further trials with this interesting molecule.

J Howard Scarffe
Reader in Medical Oncology
Christie Hospital NHS Trust
Manchester
UK