



Title **Hospitalization for Internal Radiotherapy**
Agency **CEDIT, Committee for Evaluation and Diffusion of Innovative Technologies**
Assistance Publique Hôpitaux de Paris, 3, avenue Victoria, 75100 Paris R.P., France;
tel: +33 1 40 27 31 09 fax: +33 1 40 27 55 65,
cedit@sap.ap-hop-paris.fr, <http://cedit.ap-hp.fr>
Reference CEDIT Report (in French) No. 01.05/Ra1/01/Recommendation 01.05/Re1/01

Aim

CEDIT was consulted by Professor Serge Askienazy, Head of Nuclear and Biophysical Medicine of Saint-Antoine Hospital (Paris) and President of the Association of Nuclear Medicine in Paris Area Hospitals, for an evaluation of requirements relating to internal radiotherapy (formerly called metabolic radiotherapy) in light of the expected development of this technique within the AP-HP. Internal radiotherapy involves the use of radiopharmaceuticals, or a combination of a radioisotope and a specific vector on a target to be irradiated. Effective treatment requires selective concentration of the radiopharmaceutical in the targeted organ and its retention by the tumor, without causing major damage to surrounding healthy tissues. Treatment outcome depends on the total dose absorbed and the lesion's sensitivity to radiation.

Results

Iodine 131 has now been used over several decades for differentiated thyroid carcinoma or hyperthyroidism. All professionals in the field do not agree upon the benefit of regular administration of Iodine 131 following treatment for a thyroid carcinoma by thyroidectomy. Many radiopharmaceuticals made their appearance in various clinical studies in the late 1980s, reinforcing the benefit of internal radiotherapy in the palliation of painful bone metastases that did not respond to conventional treatment. Among these new agents, two received approval for sale in France: Quadramet® and Metastron®. According to the literature, an analgesic effect is obtained in over 50% of patients. The use of Lipiocis® also offers new prospects for treating hepatocellular carcinoma. Encouraging results have been obtained in treating neuroendocrine tumors with somatostatin analogues, of which the most studied is the octreotide radiolabeled with different isotopes. In hematology, radioimmunotherapy seems promising for treating certain advanced lymphomas. The cost of doses ranges between 91€ for hyperthyroidism treated with Iodine 131 and up to 12 000 € for a series of 3 injections in treating neuroendocrine tumors by indium 111-pentetreotide. Regulatory changes could require mandatory hospitalization for patients currently treated in outpatient departments. This would incur additional costs due to the need for new rooms. Given staffing constraints, it would thus prove more cost effective to assemble internal radiotherapy activities in specialized centers.

Recommendations

The conditions required for the practice of nuclear medicine in the AP-HP, the very probable increase of indications for internal radiotherapy, and the implementation of regulations governing radioactive safety, all lead CEDIT to recommend an increase in the capacity of hospitals to house patients requiring internal radiotherapy. However, for acute cancerology indications, where internal radiotherapy seems to offer new opportunities, it is very difficult to forecast how much development needs to be planned. It appears beneficial, therefore, that all technical facilities be concentrated in specialized and highly specialized cancer centers. CEDIT emphasizes that all plans to increase the number of beds for internal radiotherapy in the AP-HP be part of current availability within and outside of the AP-HP.

Methods

A literature search was conducted, five databases were scanned: MEDLINE, EMBASE, Pascal, BIOSIS and Current Contents. Five experts were interviewed on the innovative character and on the medical benefit of this technology.

Written by: C. Edlinger, JP. Perrin, S. Baffert, C. Elie, E. Charpentier, E. Fery-Lemonnier, CEDIT, France