TREATMENT WITH 177LU-DOTATATE FOR METASTASIZED NETS – LONG-TERM EFFECTS AND A TUMOUR DOSIMETRY MODEL

Contact name: ELF, ANNA-KARIN
Institution/company: Sahlgrenska University Hospital
Phone: 34
Country: Sweden
E-mail: anna-karin.elf@vgregion.se
Type of communication: ORAL
Number Abstracs: 197
Area: 1. Volume, outcomes and quality standards in endocrine surgery.

Anna-Karin Elf Department of Surgery, Institute of Clinical Sciences; IDA MARIN DDepartment of Radiation Physics, Institute of Clinical Sciences; RAUNI Rossi Norrlund Department of Radiology; JOHANNA SVENSSON Department of Oncology; BO Wängberg Department of Surgery, Institute of Clinical Sciences; OLA NILSSON Department of Pathology; PETER BERNHARDT Department of Radiation Physics, Institute of Clinical Sciences; VIKTOR JOHANSON Department of Surgery, Institute of Clinical Sciences; . . Department of Surgery, Institute of Clinical Sciences

Abtract body (should contain maximum 300 words)
Purpose: The increasing use of peptide receptor radionuclide therapy (PRRT) for metastasized neuroendocrine tumours (NETs) gives variable tumour responses. Tumour dosimetry is scarcely studied. This study investigates the long-term outcome and toxicity after PRRT, together with the impact of absorbed tumour dose. Methods: Fifty-one patients with metastasized NETs were treated with 177Lu-DOTATATE between 2006 and 2011. Treatment fractions of 7.5 GBq 177Lu-DOTATATE, with co-infusion of amino acids were administered four times (range 1-5). Radiological and biochemical evaluations were combined with estimations of absorbed doses to tumours and kidneys. Results: Radiological response evaluation (RECIST1.1) was possible in 40 patients. The objective response rate was 15% and a majority of the patients (82%) had stable disease as the best treatment response. The median absorbed tumour dose was 52 Gy (range 10-201 Gy), however there were large inter- and intra-patient variations. A correlation between median absorbed dose and median tumour shrinkage was seen. Median follow-up time was 65 (range 1-127) months and at long-term evaluation 8 patients still had no tumour progression after median 104 months. PFS for all patients was 45 (95% CI 29-65) months and OS was 65 (95% CI 37-69) months, with worse outcome for grade 3 tumours. Mild haematological toxicity (thrombocytopenia and leukopenia grade 2-3) was seen in 6 patients. No cases of late renal failure were seen. Conclusions: Although most patients had a moderate response after 177Lu-DOTATATE, the OS and PFS were long in stage IV NETs. High tumour grade, but not diagnosis, was associated with short survival. Absorbed tumour dose seemed to correlate with tumour shrinkage after PRRT for various NETs. Key words: neuroendocrine tumour (NET), peptide receptor radionuclide therapy (PRRT), 177Lu, long-term effects, tumour dosimetry