CAN SSTR2 EXPRESSION IN SMALL INTESTINAL NETS PREDICT 177LU-DOTATATE UPTAKE AND SURVIVAL AFTER PEPTIDE RECEPTOR RADIONUCLIDE THERAPY?

Contact name: ELF, ANE-KARIN
Institution/company: Department of Surgery, Institute of Clinical Sciences
Phone: 34
Country: Sweden
E-mail: anna-karin.elf@vgregion.se
Type of communication: ORAL
Number Abstracs: 196
Area: 1. Volume, outcomes and quality standards in endocrine surgery.
Anna-Karin Elf Department of Surgery, Institute of Clinical Sciences; VIKTOR JOHANSON Department of Surgery, Institute of Clinical Sciences; IDA MARIN Department of Radiation Physics, Institute of Clinical Sciences; ANDERS Bergström Department of Pathology and Genetics, Institute of Biomedicine; OLA NILSSON Department of Pathology and Genetics, Institute of Biomedicine; JOHANNA SVENSSON Department of Oncology; BO Wängberg Department of Surgery, Institute of Clinical Sciences; PETER BERNHARDT Department of Radiation Physics, Institute of Clinical Sciences; ERIK ELIAS Department of Surgery, Institute of Clinical Sciences

Abtract body (should contain maximum 300 words)
Small intestinal neuroendocrine tumours (SI-NETs) often present with regional or distant metastases at diagnosis. Peptide receptor radionuclide therapy (PRRT) with radiolabelled somatostatin analogues is a systemic treatment option that may increase overall survival (OS). However, treatment response is variable and predictive factors have not been established. PRRT targets somatostatin receptor 2 (SSTR2). The uptake in tumour tissue on pre-treatment 68Ga -DOTATATE-PET correlates positively with tumour reduction upon PRRT. The immunohistochemical (IHC) SSTR2 expression in tumour samples has been reported to positively correlate with the PET uptake. Theoretically, a low SSTR2 expression in tumours could predict an inferior treatment response to PRRT. Methods: Using a Tissue Micro Array (TMA) consisting of samples from 412 SI-NET patients we identified a subgroup consisting of 44 patients that had received PRRT treatment during 2006-2016 at Sahlgrenska University Hospital. IHC expression of SSTR2 and Ki-67 was assessed. The uptake of 177Lu-DOTATATE uptake in 33 patients was determined. An additional subgroup of 34 patients with paired samples from 3 tumour sites was identified. SSTR2 expression was assessed in corresponding tissue samples (n=102). Data regarding OS and other treatments were collected for both groups. Results: SSTR2 expression did not vary between tumour sites, but correlated among a patient's lesions. Patients were grouped into Low SSTR2 or High SSTR2 depending on levels of SSTR2 expression. OS based on SSTR2 expression was not significantly different. Interestingly, PRRT treated patients with low SSTR2 expression received less additional treatment compared to patients with high SSTR2 expression and had a tendency towards higher 177Lu-DOTATATE uptake. Conclusion: The results from the present study suggest that a low SSTR2 expression should not exclude patients from PRRT. Keywords: small intestinal neuroendocrine tumour (SI-NET), peptide receptor radionuclide therapy (PRRT), somatostatin

receptor expression, overall survival