developments in imaging and technology may further improve the therapeutic index.

PO-0659
Impact of 68Ga-Dotatoc-PET on tumor delineation and outcome in patients with meningioma

H. Fischer[1], K. Kessel[1,2], T. Pyka[3], M. Devečka[1], M. Schwaiger[3], S.E. Combs[1,2]
[1]Technische Universität München TUM, Department of Radiation Oncology, München, Germany
[2]Institute of Innovative Radiotherapy iRT, Helmholtz Zentrum München, München, Germany
[3]Technische Universität München TUM, Department of Nuclear Medicine, München, Germany

Purpose or Objective: Surgery represents the treatment of choice for meningiomas. However, complete resection is often not possible, and recurrence is common. Radiation therapy (RT) can be prescribed as an alternative treatment to surgery for low-grade meningiomas, or in the recurrent/adjuvant setting. Differentiation between normal tissue, i.e. meninges, post-operative changes and residual viable tumor can be difficult using MR and CT imaging alone. We evaluated the impact of 68Ga-Dotatoc-PET imaging on treatment planning including potential benefit in terms of outcome.

Material and Methods: We analyzed 15 patients with WHO I meningiomas of different localizations. All patients were treated with fractionated stereotactic radiotherapy (FSRT) with a total dose of 54 Gy and a single dose of 1.8 Gy. An advanced radiation oncologist delineated gross tumor volume (GTV) independently once based on diagnostic CT and MRI only (GTV_MR/CT), and a second time complemented by data of diagnostic 68Ga-Dotatoc-PET (GTV_PET). For image fusion and target definition BrainLab iPlan RT® software (Munich, Germany) was used. The intersection and union volumes of both GTVs (GTV_inter, GTV_union), were calculated.

Results: In 11 of 15 patients (73%) the additional data gained by 68Ga-Dotatoc-PET led to a lager GTV. In four patients (27%) GTV_PET was smaller than GTV_MR/CT. The mean intersection of both GTVs was 58.6%. Hence, 41.4% of the GTV_PET was contributed only due to information from 68Ga-Dotatoc-PET. About 22.6% of the GTV_MR/CT was not delineated in the GTV_PET volume because no increased tracer enhancement could be detected in these parts. Our first analyses of overall and progression free survival showed no significance in patients with a 68Ga-Dotatoc-PET for tumor delineation during treatment planning.

Conclusion: 68Ga-Dotatoc-PET improves the detection of residual or recurrent tumor cells especially in patients with meningioma of the skull base and the sphenoorbital region. In addition it helps to spare normal tissue in patients with large tissue defects after operation. However, the interobserver variability must be taken into account. The data will now be correlated with OS and further analyzed concerning the standard uptake values (SUV) of the PET-images to assess if a threshold value can be recommended for meningioma detection and delineation.

PO-0660
Evaluation of distant brain failure among patients undergoing SRS for melanoma brain metastases

S. Kailas[1], E. Kim[1], A. Sarparast[1], P. Adedoyin[1], A. Keller[1], G. Bhattal[1], R. Ismail[1], J. Babb[1], T. Buntinx-Krieg[1], J. Dajac[1], T. Do[1], Z. Pavlovic[1], N. Ramakrishna[2]
[1]University of Central Florida, College of Medicine, Orlando, USA
[2]UF Health Cancer Center-Orlando Health, Dept. of Radiation Oncology, Orlando, USA

Purpose or Objective: The latency, overall extent, and rate, of distant brain failure for patients undergoing SRS for melanoma brain metastases is not well characterized. We evaluated the impact of multiple pre-treatment parameters including age, KPS, gender, extracranial disease status (ECD), initial number of metastases, initial aggregate tumor volume, and B-raf V600E status, on distant brain failure. We also evaluated the impact of WBRT performed before, combined with, or after SRS.

Material and Methods: The retrospective study population included 54 melanoma patients with brain metastases treated with SRS between 11/2008 and 01/2014. The distant brain metastasis-free survival (DBMFS) was defined as latency in months from initial SRS to first subsequent radiographic evidence of new brain metastasis. The extent of overall distant brain failure (ODBF) was defined as the total number of new metastases that developed following initial SRS treatment. The distant brain failure rate (DBFR) was defined as the ODBF/RFI, where RFI was defined as the maximum radiographic follow-up interval in months. Kaplan Meir analysis was used to evaluate DBMFS and Log Rank test was used to determine the significance (p-value <0.05 was considered significant). For ODBF and DBFR, Independent sample t-test and one-way ANOVA were used for statistical evaluation.

Results: The median overall DBMFS was 5.69 months. A significant difference in median DBMFS was observed for patients with KPS<70 vs KPS >70 (2.24 vs. 10.44 months, p <0.022). Females had significantly worse DBMFS than males (5.96 vs. 17.96 months, p<0.009). The initial number of metastases, total initial metastasis volume, ECD status, and B-raf V600E mutation status, were associated with no significant difference in DBMFS. The ODBF was also worse for females than males (P<0.002). The DBFR was worse for females (p<0.049), and those with c-kit mutation (P<0.024). WBRT had no significant effect on DBMFS, ODBF or DBFR in the study population.

Conclusion: Characterization of the risk of distant brain failure is important to treatment selection, prognosis and follow-up. Among patients with melanoma brain metastases treated with SRS, our study found that female gender and a KPS<70 was associated with a significantly decreased latency to distant brain failure. In addition, female gender was associated with greater overall number of distant brain metastases and rate of distant brain failure. Mutations in c-kit but not b-raf were found to be associated with increased distant brain failure. Further study is underway to examine the overall clinical prognostic relevance of these findings.

PO-0661
Gliosarcoma: prognostic and therapeutics factors

J. Castelli[1], L. Feuvret[2], Q. Haoming[3], J. Biau[4], E. Jouglar[5], A. Berger[6], G. Truc[7], F. Llama Guttierrez[8], X. Morandi[9], F. Thillays[5], D. Loussouarn[10], I. Lecouillard[1], G. Crehange[7], D. Antoni[11], E. Vauleon[12], R. De Crevoisier[1], G. Noël[11]
[1]Centre Eugène Marquis, Radiotherapy, Rennes Cedex, France
[2]La Pitié Salpétrière, Radiotherapy, Paris, France
[3]University of Rochester Medical Center, Radiation Oncology, Rochester, USA
[4]Centre Jean Perrin, Radiotherapy, Clermont Ferrand, France
[5]Insitut de Cancérologie de l'Ouest, Radiotherapy, Nantes, France
[6]CHU Poitiers, Radiotherapy, Poitiers, France
[7]Centre Georges François Leclerc, Radiotherapy, Dijon, France
[8]CHU de Rennes, Department of pathology, Rennes, France
[9]CHU de Rennes, Department of neurosurgery, Rennes, France
[10]CHU de Nantes, Departement of pathology, Nantes, France
[11]Centre Paul Strauss, Radiotherapy, Strasbourg, France
[12]Centre Eugène Marquis, Oncology, Rennes Cedex, France

Purpose or Objective: In concern gliosarcoma management, the aims of this multicentre retrospective study were to identify prognostic or therapeutic factors impacting on overall survival.