Merkel Cell Carcinoma (MCC)

- MCC is a rare and aggressive neuroendocrine skin cancer
- Incidence: approximately 2,500 new cases in U.S./year and increasing
- Risk factors: Male, age > 50, Caucasian race, UV exposure, immunodeficiency
- Treatment of localized (AJCC 8th edition stage I-IIIB) often involves: excision of primary tumor bed and sentinel lymph-node biopsy followed by adjuvant conventional radiotherapy (RT) (50-60Gy in 25-30 fractions)
- Conventional RT is associated with increased locoregional control but also significant toxicity (e.g. fibrosis, delayed wound healing, skin erythema, mucositis)
- Hypofractionated RT of 8-24Gy in 1-3 fractions has been shown to be effective in treating metastatic, gross tumors with minimal toxicity

Radiation Treatment Characteristics

Conventional RT: 2Gy per fraction (50-60Gy total) - 25-30 treatments - 3-2 months of acute side effects - Especially difficult for patients with older age, social/financial/transport difficulties, and medical-comorbidities

Hypofractionated RT: 8Gy per fraction (8-24Gy total) - 1-3 treatments (<1 week) - <1 week of acute side effects

Hypothesis

1-3 fractions of 8Gy adjuvant radiotherapy may provide adequate control in a majority of MCC patients with significantly diminished toxicity.

Cohort Selection

Cohort (n=21) - Seattle-based data repository - Patients treated from 2014-2018

Results: First locoregional recurrence

Summary

Demographics
- Median follow-up time: 567 days (90-1303 days)
- Median age: 74
- 86Gy: 19 patients, 24Gy: 2 patients
- n=15 patients treated in the initial disease setting and n=6 patients treated in the recurrent setting

Adjuvant hypofractionated RT in-field control rate
- 2/21 (9.5%) of patients had a recurrence within irradiated field during entire follow-up period

Actuarial recurrence rates (first event per patient)
- In-field recurrence rate: 4.8% 1-year, 8.2% 2-year
- Out-of-field recurrence rate: 21% 1-year, 36% 2-year

Patients experienced minimal radiation induced toxicity after treatment
- No toxicity greater than CTCAE Grade 1
- Majority of patients experienced no acute radiation-induced symptoms: 12/21 (57%)

Discussion

Patients with recurrences were effectively salvaged
- 6/7 patients with recurrences had complete clinical response to salvage treatment
- 1/3 deaths during entire follow-up was MCC related

Limitations
- Small sample size
- Possible ascertainment bias with patient enrollment
- Some patients were treated in the recurrent disease setting
- Unable to compare cohort against current literature

Future directions
- Continue following patients and increase cohort to compare recurrence rates with adjuvant conventional RT and surgery alone

Acknowledgments

Funding: MCC gift fund and P01 grant: 1PO1CA-225517-01A1
We would like to thank all of the MCC patients and their families who participate in our research so we may better understand and treat this aggressive cancer.

References