Brain Metastasis (1-3 Lesions)

This practice algorithm has been specifically developed for MD Anderson using a multidisciplinary approach and taking into consideration circumstances particular to MD Anderson, including the following: MD Anderson’s specific patient population; MD Anderson’s services and structure; and MD Anderson’s clinical information. Moreover, this algorithm is not intended to replace the independent medical or professional judgment of physicians or other health care providers. This algorithm should not be used to treat pregnant women.

NOTE: Consider Clinical Trials as treatment options for eligible patients.

CLINICAL PRESENTATION

1-3 possible metastatic lesions on MRI brain

1 Consider advanced care planning at treatment disposition.

2 The decision to resect a tumor depends on the size of the lesion, its location, feasibility, necessity, and other factors. For example, smaller (less than 2 cm), deep, asymptomatic lesions may be considered for treatment with Stereotactic Radiosurgery (SRS) versus larger (greater than 2 cm), symptomatic lesions may be more appropriate for surgery.

3 Consider memantine to prevent cognitive decline associated with WBRT.

WBRT = whole brain radiation therapy

TREATMENT

Resectable?*

Yes

Surgery followed by WBRT* 30 Gy/10 fractions or followed by stereotactic radiosurgery (SRS) or

Stereotactic radiosurgery alone or

Stereotactic radiosurgery and WBRT* 30 Gy/10 fractions

Consider chemotherapy if clinically applicable

No

Stereotactic radiosurgery or

WBRT* 30 Gy/10 fractions or

Chemotherapy for primary cancer and surveillance

Follow-up

Is primary cancer diagnosis confirmed?

Yes

MRI brain every 2 to 3 months for 1 year then as clinically indicated and

Consider neuropsychological evaluation and

Continue follow-up for primary cancer as clinically appropriate

No

Establish diagnosis with tissue acquisition by brain resection or Follow with serial imaging to better characterize the nature of the CNS lesion if tissue acquisition is contraindicated

Symptomatic lesion?

Yes

Systemic work-up to establish diagnosis, consider:

• Body FDG-PET
• CT chest abdomen/pelvis
• Other imaging and tests as clinically indicated

No

Is primary cancer diagnosis confirmed?

Yes

MRI brain every 2 to 3 months for 1 year then as clinically indicated and

Consider neuropsychological evaluation and

Continue follow-up for primary cancer as clinically appropriate

No

1 Consider advanced care planning at treatment disposition.

2 The decision to resect a tumor depends on the size of the lesion, its location, feasibility, necessity, and other factors. For example, smaller (less than 2 cm), deep, asymptomatic lesions may be considered for treatment with Stereotactic Radiosurgery (SRS) versus larger (greater than 2 cm), symptomatic lesions may be more appropriate for surgery.

3 Consider memantine to prevent cognitive decline associated with WBRT.

WBRT = whole brain radiation therapy

Approved by the Executive Committee of the Medical Staff on 11/28/2017

Department of Clinical Effectiveness V4

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**RECURRENT**

1. Recurrent disease; local site¹,²
   - Previous surgery
   - Previous whole brain radiation
   - Previous stereotactic radiosurgery

2. Recurrent disease; distant brain with or without local recurrence¹,²
   - 1 to 3 lesions³

**SURVEILLANCE**

- Surgery or Single-dose or fractionated stereotactic radiation therapy or WBRT or Consider chemotherapy Supportive care
- Surgery Single-dose or fractionated stereotactic radiation therapy Chemotherapy Consider WBRT if greater than 6 month has elapsed Supportive care
- Surgery Chemotherapy WBRT LITT Supportive care
- Stereotactic radiosurgery Surgery Chemotherapy WBRT with or without stereotactic radiosurgery Supportive care
- Chemotherapy WBRT Supportive care

**ADDITIONAL RECURRENT**

Brain imaging every 2 to 3 months indefinitely

- Yes
  - Progressive disease?
    - Yes
      - See Box A or Box B
    - No
      - Individualize care as clinically indicated

- No
  - WBRT = whole brain radiation therapy
  - LITT = laser interstitial thermal therapy

¹ Clinician should ensure that imaging changes are more likely secondary to tumor recurrence rather than necrosis due to prior stereotactic radiosurgery (SRS)
² Systemic disease to be treated as clinically indicated
³ Recurrence on imaging can be confounded by treatment effects; strongly consider tumor tissue sampling if there is a possibility of treatment-related necrosis

NOTE: Consider Clinical Trials as treatment options for eligible patients

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SUGGESTED READINGS
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DEVELOPMENT CREDITS

This practice algorithm is based on majority expert opinion of the Brain Metastasis Work Group Faculty at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

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