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## **CO-10. Salvage frameless radiosurgery as first treatment option for recurrent brain metastases. A single institution experience**

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**Objective:** To assess the role of frameless stereotactic radiosurgery (FL-SRS) as first treatment option in recurrent brain metastases (r-BM) previously treated with SRS, WBRT or metastasectomy  $\pm$  RT.

**Material and methods:** Patients (p) were immobilised with a thermoplastic mask and an individualised dental mould. Radiation techniques were selected depending on location, shape and size of the lesion. Treatment was delivered with a VERSA-HD linac equipped with FFF, CBCT and HEXAPOD system. Circular collimators were used when the diameter of the BM was  $< 1$  cm. PTV was defined as GTV plus 1,5-2 mm margin. The total dose was prescribed to 95% of the PTV in 1-5 fractions. The treatment planning was designed using either arch-therapy, IMRT or VMAT.

**Results:** Between Oct/14-April/17, 28 patients (98 r-BM) were diagnosed and treated for r-BM. Primary tumor distribution was: NSLC (11p, 39%), breast cancer (7p, 25%) and other (10p, 36%). A median of 3 r-BM were treated per patient with a median dose of 18.88 Gy. The median PTV volume was 1,00cc. Nineteen patients were previously treated with SRS (68%), 6p received WBRT (21%), 2p underwent metastasectomy plus irradiation of the surgical bed (7%) and 1p metastasectomy alone (4%). Forty-three percent of BM showed clinical response (24% complete response and 19% partial

response), 29% stable disease, 2% progressed and 26% were lost in the follow-up. Local progression was observed in 8 r-BM (8%) and the local-failure free-survival (LFFS) was 86% at 1-year and 73% at 2-years. Distant failure was recorded in 13p (46%). The distant-failure free-survival (DFFS) was 82% at 6 months, 58% at 1-year and 29% at 2-years. With a median follow up of 19 months, the median OS has not been reached, brain-PFS and OS at 1-year and 2 years were 70%-52% and 29%-35%, respectively. Twelve BM developed signs of radionecrosis (12%) and 2/7p were symptomatic requiring an active treatment. One patient diagnosed of melanoma BM presented hemorrhage that needed surgical evacuation two weeks after the SRS. One patient died due to a neurological cause. Our data show better OS in patients with controlled extracranial metastatic disease.

**Conclusions:** Even though the results considering brain-PFS and OS are poorer in comparison with the group treated for primary BM, FL-SRS is still an effective first option treatment in patients with recurrent BM in terms of local and distant control. In addition, selected patients had a durable local control and survival, in particular if extracranial disease remained under control.

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