



Whole brain radiotherapy with radiosensitizer for brain metastases: a meta-analysis of randomized controlled trials.

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Gustavo A Viani, Gustavo M Borges, Ellen C Fonseca, Ligia I De fendi, Sergio L Afonso and Eduardo J Stefano

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Abstract (provisional)

Purpose To study the efficacy of whole brain radiotherapy (WBRT) with radiosensitizer in comparison with WBRT alone for patients with brain metastases in terms of overall survival, disease progression, response to treatment and adverse effects of treatment. **Materials and Methods** A meta-analysis of randomized controlled trials (RCT) was performed in order to compare WBRT with radiosensitizer for brain metastases and WBRT alone. The MEDLINE, EMBASE, LILACS, and Cochrane Library databases, in addition to Trial registers, bibliographic databases, and recent issues of relevant journals were researched. Significant reports were reviewed by two reviewers independently.

Results

A total of 8 RCTs, yielding 2317 patients were analyzed. Pooled results from this 8 RCTs of WBRT with radiosensitizer have not shown a meaningful improvement on overall survival compared to WBRT alone OR= 1.03 (95% CI 0.84 -1.25, p=0.77). Also, there was no difference in local brain tumor response OR=0.8(95% CI 0.5 - 1.03) and brain tumor progression (OR=1.11, 95% CI 0.9 - 1.3) when the two arms were compared.

Conclusion

Our data show that WBRT with the following radiosensitizers (ionidamine, metronidazole, misonodazole, motexafin gadolinium, BUdr, efaproxiral, thalidomide), have not improved significantly the overall survival, local control and tumor response compared to WBRT alone for brain metastases. However, 2 of them, motexafin- gadolinium and efaproxiral have been shown in recent publications (lung and breast) to have positive action in lung and breast carcinoma brain metastases in association with WBRT.

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