



EFFICACY OF MEMANTINE IN PREVENTING NEUROCOGNITIVE DYSFUNCTION INDUCED BY RADIATION THERAPY IN PATIENTS WITH BRAIN METASTASES: A SYSTEMATIC REVIEW OF CLINICAL TRIALS.

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OBJECTIVES		PRISMA FLOWCHART
<p>To gather the safety and efficacy data of memantine therapy in prevention of neurocognitive dysfunction induced by radiation therapy in brain metastases patients.</p>		<p>Records identified in databases (n=1194)</p> <p style="text-align: center;">↓</p> <p>Records after removing duplication(n=1022)</p> <p style="text-align: center;">↓</p> <p>Title and abstracts screened (n=12)</p> <p style="text-align: center;">↓</p> <p>Record assessed for eligibility (n= 4)</p> <p style="text-align: center;">↓</p> <p>Studies included in qualitative synthesis (4)</p>
METHODS		
<p>Comprehensive literature search in PubMed®, Embase®, Scopus®, The Cochrane Library, ClinicalTrail.gov and Google scholar from an inception until November 2021</p>		

RESULT				
Studies	Cognitive test	Memantine arm	Control arm	P value
Brown PD et al, 2013	Recall and recognition	0.36 (Median difference)	0.72	0.39
Wong P et al 2016	NAWM	0.1 (AUC difference)	1.9	0.01
Brown PD et al,	Recall and recognition	0.8 (mean difference)	0.13	0.058
	COWA Test	0.16	- 0.08	<0.0001

CONCLUSION

This comprehensive review revealed that memantine therapy had considerable benefits in preventing neurocognitive dysfunction and enhancing patients’ quality of life following radiation therapy in brain metastatic patients.

REFERENCE

1. Brown PD, Pugh S, Laack NN, et al. Memantine for the prevention of cognitive dysfunction in patients receiving whole-brain radiotherapy: A randomized, double-blind, placebo-controlled trial. *Neuro-Oncology*. 2013;15:1429–1437.
2. Brown PD, Gondi V, Pugh S, et al. Hippocampal Avoidance During Whole-Brain Radiotherapy Plus Memantine for Patients With Brain Metastases: Phase III Trial NRG Oncology CC001. *J Clin Oncol* 2020;38:1019–1029.