This interesting review analyzes the emerging options in the treatment of cognitive impairments in cancer patients.

This is an important field of research receiving an increasing attention in the last years due to the growing knowledge on the wide range of cognitive deficits induced by anti-cancer treatments, that are a major cause of disability and significantly affect patients’ independence and quality of life.

However, in my opinion the manuscript requires minor revisions

1-Introduction

The Authors report a complete description of the possible mechanisms underlying cognitive deficits induced by anticancer agents. In my opinion, the inclusion of one paragraph dedicated to glucocorticoids-induced psychiatric syndromes may be confusing for the reader, giving the strong difference between cognitive and psychiatric disturbances. Similarly concerning the opioid-induced delirium in palliative setting reported in the same paragraph.

2-The review of the studies exploring pharmacologic agents in the treatment of cognitive deficits includes studies with several methodological limitations. In general, the quality of studies reported is variable, which limited comparability and generalizability of the findings. For example, in several trials the sample size is very small; cognitive assessment tools are different, ranging from Mini Mental Test Examination to comprehensive neuropsychological batteries; trials design include phase I and phase II studies and in some case preclinical studies. Methodological limitations have a negative impact on both the quality of the trials and the ability to draw firm conclusions.

3-PPAR paragraph

In the last sentence of the paragraph the phase of the trial is missing

4-discussion

Considering that the number of successful studies of pharmacological agents for the treatment of cognitive deficits in cancer patients is still very low, the authors should include statements regarding the limitations of their review and the lack of definitive data on the activity of the drugs discussed.

Discretionary revisions
I would suggest to include in the discussion some comment of recent advances on cognitive deficit treatment in cancer patients with rehabilitation programs that seem to have higher success rates than pharmacological and/or prevention studies.

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.