A Working memory performance is associated with functional connectivity between the right dlPFC and DMN in glioma patients

Citation for published version (APA):

Document license:
TAVERNE

DOI:
10.1093/neuonc/noac174.077

Document status and date:
Published: 01/09/2022

Document Version:
Publisher's PDF, also known as Version of Record (includes final page, issue and volume numbers)

Please check the document version of this publication:
• A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
• The final author version and the galley proof are versions of the publication after peer review.
• The final published version features the final layout of the paper including the volume, issue and page numbers.

Link to publication

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.
• Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
• You may not further distribute the material or use it for any profit-making activity or commercial gain
• You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:
www.tue.nl/taverne

Take down policy
If you believe that this document breaches copyright please contact us at:
openaccess@tue.nl
providing details and we will investigate your claim.

Download date: 19. Sep. 2023
Patient brains were parcellated into ROIs using both the Gordon and Yeo atlas, which have the FPN and DMN network identities readily available. The dIPFC was defined based on masks retrieved from NeuroSynth. To compare DMN-FPN functional connectivity in these populations, we used an independent samples t test. For this purpose, the statistical significance level was set at p<0.003 (false discovery rate correction). The Gordon atlas (p < 0.003) and Yeo atlas (p < 0.007) were used to assess working memory performance. For both the Gordon atlas (p < 0.003) and Yeo atlas (p < 0.007), no association was found for the correlation between activity in the whole FPN and the DMN. CONCLUSION: Our findings show that working memory performance for glioma patients is related to interactions between networks that can be measured with resting-state fMRI. Furthermore, the results provide further evidence that not only specific brain regions are important for cognitive performance, but that the interactions between large-scale networks should be considered.

**P01.04.** LESION-SYMPTOM MAPPING BASED ON STROKE OR GLIOMA: ETOLOGY MATTERS!


**BACKGROUND:** Lesion-symptom mapping is a key tool in understanding the relationship between brain structures and behavior. However, the behavioral consequences of lesions from different etiologies may vary as a result of how they affect brain tissue, and how they are distributed.

TILBURG, Netherlands.

**METHODS:** Lesion-symptom maps (LSM) were obtained for a large cohort of glioma patients. Lesions were classified into two etiological groups: glioblastoma multiforme (GBM) and anaplastic astrocytoma (AA). The patients included in this study were those who had undergone surgery for glioma at our institution. The study group comprised two main subgroups: GBM and AA. The glioma patients were selected based on the following criteria: (1) the presence of a single, localized lesion in the brain; (2) the lesion was confirmed to be a glioma by histopathological examination; (3) the lesion was located in a region that is important for cognitive function; and (4) the lesion was measured using MRI scans. The lesions were divided into two groups: group 1 included patients with GBM, and group 2 included patients with AA.

**RESULTS:** The results showed that the etiology of the lesion significantly influences the lesion-symptom associations. In particular, the patterns of cognitive impairment observed in patients with GBM were different from those observed in patients with AA. These differences were observed in the frontal lobe, parietal lobe, and temporal lobe. In addition, the number of patients with lesions in each group was different, with a higher number of patients with lesions in the frontal lobe in the GBM group than in the AA group.

**CONCLUSIONS:** Our findings suggest that the lesion-symptom associations observed in glioma patients are influenced by the etiology of the lesion. This highlights the importance of considering the etiology of the lesion when interpreting lesion-symptom maps in glioma patients.