

Titel der Arbeit:**The impact of early corticosteroid pretreatment before initiation of chemotherapy in patients with primary central nervous system lymphoma**

Einfluss der perioperativen Cortisongabe bei Patienten mit primärem ZNS B-Zell-Lymphom

Objective:

Treatment of primary central nervous system lymphoma (PCNSL) is still a matter of intense research and clinical studies. Although often included in the treatment regimens (e.g. R-CHOP), the administration of corticosteroids (CS) prior to chemotherapy remains controversial due to a possible “priming” of tumor cells resulting in reduced response to anti-CD20 therapies. The optimal timing of corticosteroid (CS) treatment in patients with primary central nervous system (CNS) lymphoma (PCNSL) remains controversial. While poor clinical presentation may justify early treatment with CS, this may ultimately result in reduced concentrations of chemotherapeutic agents via perturbations in the permeability of the blood-brain-barrier (BBB). This study sought to investigate whether early CS exposure is associated with beneficial outcomes and/or reduced occurrence of adverse events as opposed to delayed/concomitant administration.

Methods:

In our department, a total of 54 patients were diagnosed with PCNSL after stereotactic biopsy from 2009 to 2013. Perioperative corticosteroid administration, patient and tumor characteristics, surgical complications, postoperative treatment, histopathological markers, clinical course and outcome were included in the database.

Results:

Our cohort included 50 consecutive patients diagnosed with PCNSL; of these, 30 patients CS administration was initiated prior to chemotherapy (“early”), whilst in the remaining 20 patients CS administration was initiated concomitantly with their chemotherapeutic regimen (“concomitant”). Within the early vs. concomitant CS administration groups, no significant differences were observed with regard to progression-free survival ($p=0.81$), overall survival ($p=0.75$) or remission ($p = 0.68$; OR 0.76, CI (95%) 0.22-2.71). Critically, the timing of CS initiation was not associated with either progression-free ($p = 0.81$) or overall survival ($p = 0.75$).

Conclusion:

Early CS administration was not associated with a deterioration in response to chemotherapy, progression-free survival, or overall survival. As such, administration of CS prior to initiation of chemotherapy is both reasonable and safe for those patients newly diagnosed with PCNSL.

Eingebrachte Publikation (Zur Publikation akzeptiert bei *Neurosurgery*):

The impact of early corticosteroid pretreatment before initiation of chemotherapy in patients with primary central nervous system lymphoma

Florian Gessler, M.D.¹, Joshua D. Bernstock, Ph.D., M.P.H.², Bedjan Behmanesh, M.D.¹, Uta Brunnberg, M.D.³, Patrick Harter, M.D.⁴, Daniel Ye, B.Sc.², Gregory K. Friedman, M.D.⁵, Martin-Leo Hansmann, M.D., Ph.D.⁶, Marlies Wagner, M.D., Ph.D.⁷, Volker Seifert, M.D., Ph.D.¹, Lutz Weise, M.D., Ph.D.¹, Gerhard Marquardt, M.D., Ph.D.¹

1Department of Neurosurgery, University Hospital Frankfurt, Goethe-University Frankfurt, Schleusenweg 2-16, 60528 Frankfurt, Germany,

2Stroke Branch, National Institute of Neurological Disorders and Stroke, National Institutes of Health (NINDS/NIH), 10 Center Drive, Bethesda, MD 20892, USA

3Department of Internal Medicine II, Hematology/Oncology, University Hospital Frankfurt, Goethe-University Frankfurt, Theodor-Stern-Kai 7, 60528 Frankfurt, Germany,

4Goethe-University, Institute of Neurology (Edinger-Institute), Goethe-University Frankfurt, Heinrich-Hoffmann-Strasse 7, 60528 Frankfurt, Germany

5Department of Pediatrics, Neuro-Oncology Program, University of Alabama at Birmingham, 1600 7th Avenue South, Lowder 512, Birmingham, AL, USA

6Dr. Senckenberg Institute of Pathology, University Hospital Frankfurt, Goethe-University Frankfurt, Theodor-Stern-Kai 7, 60596 Frankfurt, Germany

7Institute of Neuroradiology, University Hospital Frankfurt, Goethe-University Frankfurt, Schleusenweg 2-16, 60528 Frankfurt, Germany

Kontakt:

Florian Gessler

Klinik und Poliklinik für Neurochirurgie

Goethe Universitätsklinikum Frankfurt am Main

Schleusenweg 2-16

60528 Frankfurt am Main

E-mail: f.gessler@med.uni-frankfurt.de