IPCG

International PCNSL Collaborative Group

The IPCG criteria are widely used in routine practice for the assessment of treatment response in Primary central nervous system lymphoma. However, the value of the IPCG criteria for ultimate clinical outcome prediction is largely unclear, mainly due to the uncertainty in delineating complete from partial responses during and after treatment.

Lauer et al. explored various MRI features including semi-automated 3D tumor volume measurements at different disease milestones and their association with survival in 93 CNSL patients undergoing curative-intent treatment.

At diagnosis, patients with more than three lymphoma lesions, periventricular involvement, and high 3D tumor volumes showed significantly unfavorable PFS and OS. At first interim MRI during treatment, the IPCG criteria failed to discriminate outcomes in responding patients. Therefore, they randomized these patients into training and validation cohorts to investigate whether 3D tumor volumetry could improve outcome prediction. They identified a 3D tumor volume reduction of \geq 97% as the optimal threshold for risk stratification (=3D early response, 3D_ER). Applied to the validation cohort, patients achieving 3D_ER had significantly superior outcomes. In multivariate analyses, 3D_ER was independently prognostic of PFS and OS. Finally, we leveraged prognostic information from 3D MRI features and circulating biomarkers to build a composite metric that further improved outcome prediction in CNSL.

They developed semi-automated 3D tumor volume measurements as strong and independent early predictors of clinical outcomes in CNSL patients. These radiologic features could help improve risk stratification and help guide future treatment approaches ¹⁾

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Lauer EM, Riegler E, Mutter JA, Alig SK, Bleul S, Kuehn J, Ranganathan L, Klingler C, Demerath T, Würtemberger U, Rau A, Weiß J, Eisenblaetter M, Bamberg F, Prinz M, Finke J, Duyster J, Illerhaus G, Diehn M, Alizadeh AA, Schorb E, Reinacher PC, Scherer F. Improved early outcome prediction by MRIbased 3D tumor volume assessment in patients with CNS lymphomas. Neuro Oncol. 2023 Sep 15:noad177. doi: 10.1093/neuonc/noad177. Epub ahead of print. PMID: 37713267.

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