

Study group – Primary and Secondary Brain Tumors in Adults

The study group integrates imaging and biomaterial-based methods in a methods toolbox to develop personalized diagnostic and therapeutic solutions for adult patients with primary and secondary brain tumors.

Speaker: Prof. Dr. Peter Hau, Regensburg

Concept & Achievements

Work Packages Funding Period 1

WP01: Prediction of progression and pseudo-progression from artificial intelligence (AI)-processed imaging

WP02: Classification of primary brain tumors from AI-processed imaging

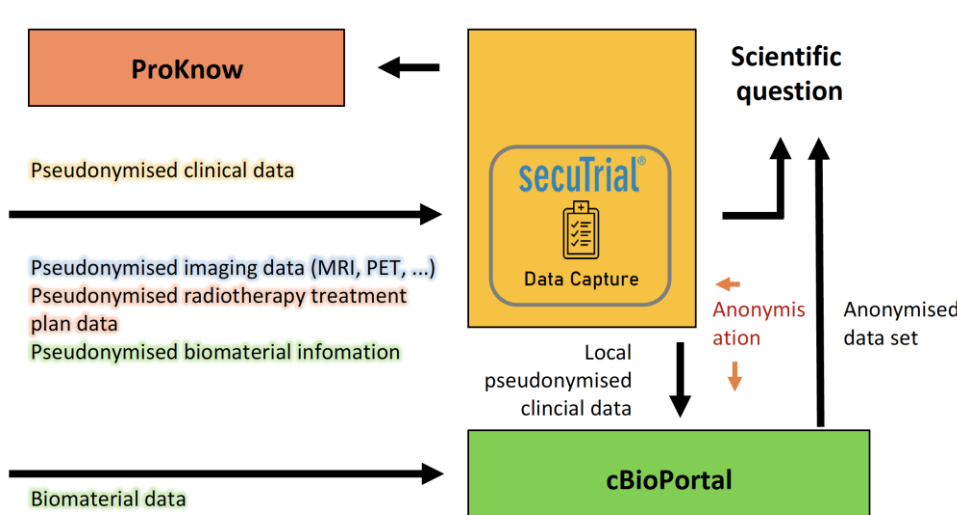
WP03: Site-wide standards for collection, sample logistics, pre-analytics and biobanking of CSF, other liquid biopsies and tumor tissue

WP04: Cross-site comparison of panel sequencing to reveal therapeutic targets

WP05: Cross-site comparison of radiotherapy quality

Integration in the BZKF Network

The BZKF network idea has been extensively implemented. All BZKF sites are involved, and at most sites, all neuro-oncology partners have teamed up. Our regular networking VC's, with the 9th meeting at July 1, 2022, attract 20 to 30 attendants in average.



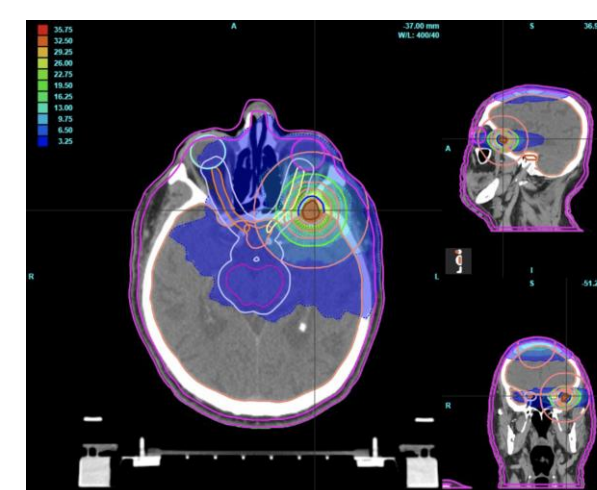
Current Benefit for Patients

- Close interactions between Bavarian academic partners
- Uniform MRI and PET imaging sequences
- Imaging with radiomics- and deep learning-based imaging assessment

- Pathway to uniform biomarker/molecular diagnostics
- First steps in direction of standardized evaluation and implementation of molecular therapy targets

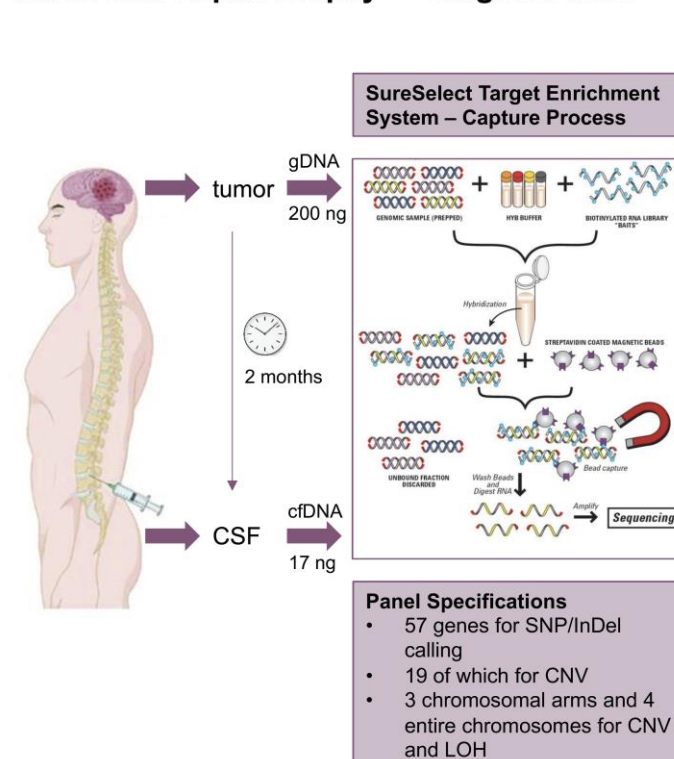
WP01, 02 and 03:

Poster of Pediatric Brain Tumor Group (WP02, WP03)



WP04: Target Definition

Tumor and Liquid Biopsy Targeted NGS



WP05: Radiotherapy QA (ProKnow)

Variation in target volume concepts across centers / impact on outcome

- Cloud-based software for quality assurance of radiotherapy plans
- Data protection clearance granted
- Approval of funds from BZKF
- Successful test run with anonymized data set
- Computer scientist position advertised

Publications: A.J. Zounek, N.L. Albert, L. von Baumgarten, J.-C. Tonn et al.: Radiomics features derived from [¹⁸F]FET or [¹⁸F]GE-180 PET images of gliomas – does feature harmonization facilitate data pooling? EJNMMI, under revision

Future Milestones

- Federated learning within a unique environment of 6 high-throughput academic university sites
- Virtual tumor board to cover needs of patients with primary CNS tumors
- Platform setup and participation in innovative target-driven interventional Phase 0 to III academic and industry studies
- Patient advisory board to support further development of activities

Prospective non-interventional trial for AYAs with high-risk CNS tumors

- Diagnostic and prognostic MRI- and FET-PET imaging
- Radiotherapy quality assurance and evaluation of radiotherapy treatment patterns
- Diagnostic and predictive liquid biopsies from cerebrospinal fluid (CSF) and blood
- Targeted therapy pipeline after progression prepared

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