Study Group – Lymphoma

Our study group focuses on treatment optimization for patients with refractory or relapsed (r/r) malignant lymphoma. Currently, we are establishing a Bavarian disease registry in order to harmonize diagnostics and treatment at the BZKF centers, and to enable accompanying translational research.

Speaker: Prof. Dr. Florian Bassermann / PD Dr. Simon Heidegger (Technical University Munich)

Concept & Achievements

BZKF Registry r/r Lymphoma
Our study group constituted on December 12th 2020, and in monthly virtual meetings has since been working on the registry for patients with r/r lymphoma and accompanying research projects. A particular focus of the registry will be longitudinal bio-sampling and centralized image analysis in order to allow for biological and reverse-translational research projects.

We have developed a **registry protocol** with modular structure that allows future amendments to accommodate for increasing interactions within the BZKF. Within the study center of the LMU BZKF site, a **server structure** and **EDC-system** have been made available. Currently, we are preparing the integration of 4000 data sets of lymphoma patients with long-term follow-up from trials of the German Low Grade Lymphoma Study Group (GLSG) into the registry data bank.

In parallel, the study group is working on two additional research projects:

COVID-19 in Lymphoma Patients
Patients with malignant lymphomas are considered at high risk for severe COVID-19, but structured data spanning the different phases of the pandemic (i.e. longitudinal analyses) are missing. In an observational study, we assembled a highly-comprehensive clinical data set from the different BZKF centers comprising >**100 patients** with malignant lymphomas and SARS-CoV2 infections (**Fig. 1**).
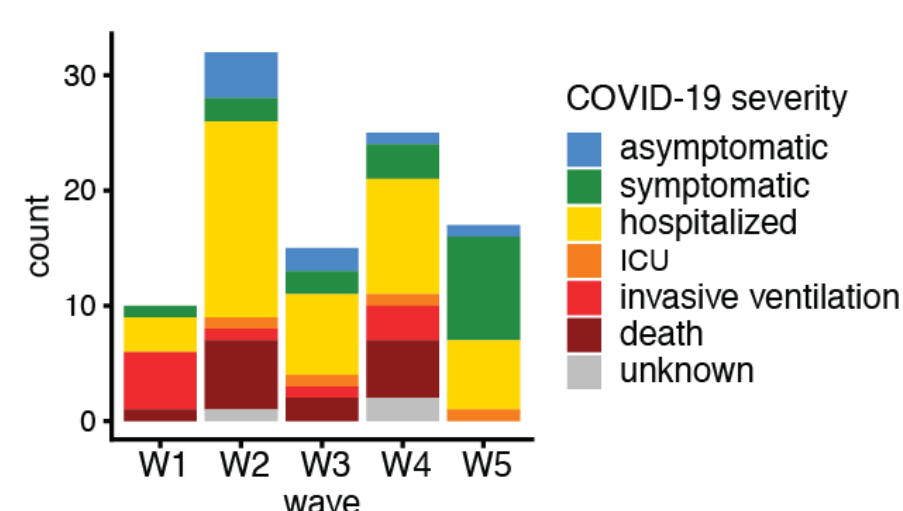

Figure 1: Interim analysis of severity of COVID-19 in 100 patients with malignant lymphomas at the BZKF centers across the consecutive pandemic waves.

Data are currently being analyzed and a joint BZKF manuscript is prepared for publication.

PET imaging in Lymphoma
Positron emission tomography (PET) plays an increasing role as image-based prognostic biomarker in lymphoma, but is complex in its utilization. PET/CT installations at all BZKF partner sites meet the EARL accreditation criteria and – on initiative of our study group – have developed and adapted **a harmonized BZKF protocol for FDG PET/CT in lymphomas**. Certified high scanner and image quality allows us to currently perform a retrospective analysis of more than 60 PET/CT data sets from different BZKF sites for their role in early response assessment after CD19 CAR T-cell therapy in patients with r/r large B cell lymphoma (**Fig. 2**).
Based on these findings, and in close cooperation with the BZKF lighthouse

projects Cellular Immunotherapies and Imaging/Theranostics, we will initiate a prospective trial to assess the prognostic value of PET/CT imaging in combination with a variety of biological markers such as expansion and persistence of CAR T cells.
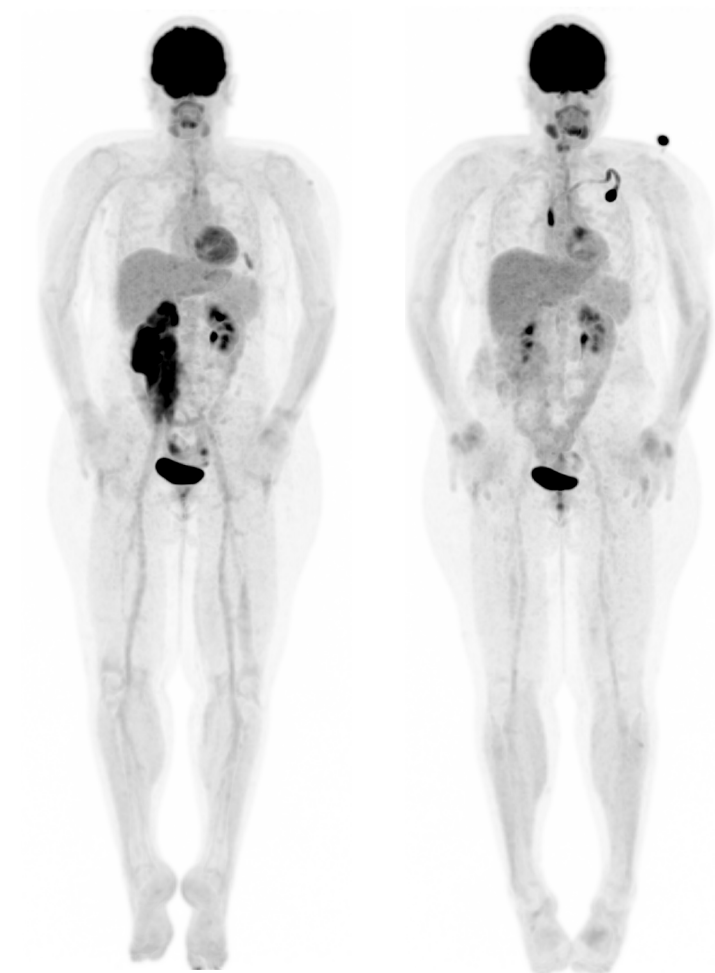

Figure 2: PET/CT before and 30 days after CD19 CAR T-cell therapy in a 31-year old patient with r/r DLBCL in currently ongoing complete remission.

Future Milestones

» **Ethics approval for the BZKF registry of patients with r/r malignant lymphoma**

» **Establishment of an online patient portal for remote and continuous QoL assessment as IT use case within the BZKF**

» **Harmonized acquisition and reporting of imaging data for lymphomas within the BORN project as basis for centralized image data analysis**

» **Initiation of a clinical study on PET-imaging for early response assessment after CD19 CAR T-cell therapy in patients with r/r DLBCL**

Authors: Florian Bassermann, Simon Heidegger (TUM); Martin Dreyling, Oliver Weigert (LMU); Dirk Hellwig, Tobias Pukrop (UKR); Rainer Claus, Klaus Hirschbühl (UKA); Fabian Mueller, Benedikt Jacobs (FAU); Johannes Düll (JMU)