Oncology, Nuclear Medicine and Transplantology
(eISSN 3105-8760)

Conference Abstract A28

First-Line Therapy of Primary Central Nervous System Lymphoma: A Russian Multicenter Study

V.V. Markelov[1], Yu.S. Osipov[2], E.K. Sokolova[3], S.V. Voloshin[4], Yu.A. Alexeeva[2], A.A. Sinkevich[5], P.A. Tereshenkova[6], N.A. Khasanova[7], D.I. Surtaeva[8], E.E. Zinina[9], O.S. Samoilova[10], N.V Minaeva[11], N.N. Glonina[12], L.V. Anchukova[13], E.V. Patrakova[14], E.V. Zubkova[15], A.Yu. Kuvshinov[16], I.S. Zyuzgin[17], E.A. Ukrainchenko[18], M.A. Kolesnikova[19], I.S. Stepochkin[20], E.S. Pavlyuchenko[21], Yu.N. Vinogradova[22], T.S. Konstantinova[23], A.N. Gavrilenko[1], L.V. Fedorova[1], K.V. Lepik[1], V.V. Baikov[1], N.B. Mikhailova[1], A.D. Kulagin[1]

[1]*R.M. Gorbacheva Research Institute of Pediatric Oncology, Hematology and Transplantology, First Saint Petersburg State Medical University named after I.P. Pavlov, Saint Petersburg, Russia*
[2]*V.A. Almazov National Medical Research Center, Saint Petersburg, Russia*
[3]*A.I. Burnazyan Federal Medical Biophysical Center, Moscow, Russia*
[4]*Leningrad Regional Clinical Hospital, Saint Petersburg, Russia*
[5]*Regional Clinical Hospital, Krasnoyarsk, Russia*
[6]*V.A. Baranov Republican Hospital, Petrozavodsk, Russia*
[7]*City Clinical Hospital No. 31, Saint Petersburg, Russia*
[8]*Regional Clinical Hospital, Barnaul, Russia*
[9]*Surgut District Clinical Hospital, Surgut, Russia*
[10]*N.A. Semashko Nizhny Novgorod Regional Clinical Hospital, Nizhny Novgorod, Russia*
[11]*Kirov Research Institute of Hematology and Blood Transfusion, Kirov, Russia*
[12]*Professor S.I. Sergeev Regional Clinical Hospital, Khabarovsk, Russia*
[13]*Vologda Regional Clinical Hospital, Vologda, Russia*
[14]*Vologda Regional Clinical Hospital No. 2, Cherepovets, Russia*
[15]*Irkutsk Regional Oncological Dispensary, Irkutsk, Russia*
[16]*Russian Research Institute of Hematology and Transfusiology, Saint Petersburg, Russia*
[17]*N.N. Petrov National Medical Research Center of Oncology, Saint Petersburg, Russia*
[18]*City Clinical Hospital No. 17, Saint Petersburg, Russia*
[19]*City Clinical Hospital No. 2, Novosibirsk, Russia*
[20]*Novgorod Regional Clinical Hospital, Veliky Novgorod, Russia*
[21]*North-Western State Medical University named after I.I. Mechnikov, Saint Petersburg, Russia*
[22]*A.M. Granov Russian Research Center for Radiology and Surgical Technologies, Saint Petersburg, Russia*
[23]*Sverdlovsk Regional Clinical Hospital No. 1, Yekaterinburg, Russia*

Proceedings of III International Scientific and Practical Conference "Current Issues of Bone Marrow Transplantation and Hematology", October 11-12, 2025, Astana, Kazakhstan

Corresponding author's email: hema.dep2016@gmail.com

Introduction

Primary central nervous system lymphoma (PCNSL) is a rare subtype of extranodal lymphomas with an aggressive clinical course. Currently, there are no systematic data available in the Russian Federation regarding treatment outcomes and prognosis in patients with PCNSL.

The aim of this study was to evaluate the clinical and epidemiological characteristics of patients with PCNSL, the current first-line therapeutic landscape, and treatment outcomes in real-world clinical practice.

Methods

From 2010 to 2025, a total of 205 adult patients with histologically confirmed PCNSL from 23 centers across Russia were included in the study.

Key patient and disease characteristics are presented in Table 1.

Results

As first-line therapy, 96% of patients (n=196) received immuno- and/or chemotherapy (ICT) regimens, 3% (n=6) underwent radiotherapy, and 1% (n=3) received glucocorticoids alone.

Within the ICT group, rituximab was administered to 83% of patients (n=162) with CD20-positive PCNSL. High-dose methotrexate (HD-MTX)–based regimens accounted for 71% of ICT cases (n=139). The most frequently used HD-MTX–based regimens were R-HDMTX-AraC (35%, n=49), R-MP(D)V ± lenalidomide (17%, n=23), R-HDMTX (14%, n=19), and R-HDMTX-temozolomide (10%, n=14). The MATRix protocol was administered in 5% of cases (n=7). The remaining patients (29%, n=57) received other intensive regimens (R-DeVIC – 5%, n=3) or non-intensive regimens (68%, n=39), most commonly temozolomide and/or MTX combinations ± other agents (49%, n=28). In 26% (n=15) of these patients, intra-arterial chemotherapy with MTX was performed using temporary opening of the blood–brain barrier.

In the ICT group, treatment response was assessed in 166 patients (85%). An objective response (OR) was achieved in 71% (n=118), including complete response (CR) in 42% (n=69) and partial response (PR) in 29% (n=49). Stable disease (SD) was observed in 11% (n=19), while 17% (n=29) experienced progressive disease (PD). Treatment-related mortality prior to restaging occurred in 8% (n=15). In the radiotherapy group, 83% (n=5) achieved CR, while 1 patient had PD.

At a median follow-up of 12 months (range 0.5–151), 2-year overall survival (OS) was 49%, and 2-year progression-free survival (PFS) was 33% (Figure 1).

In the ICT group, 35% of patients with OR (n=41) received consolidation therapy: 26 with CR and 15 with PR. High-dose chemotherapy followed by autologous hematopoietic stem cell transplantation (auto-HSCT) was performed in 23 patients, while 17 underwent whole-brain radiotherapy (WBRT), and 1 received a combination of both. Among patients who underwent consolidation, 2-year OS was 84.7% and 2-year PFS was 68.4%. Outcomes did not differ between patients in CR and PR at the time of consolidation: OS 88.6% vs. 80% (p=0.73), PFS 72.2% vs. 63.4% (p=0.86). Consolidation method did not impact outcomes: OS after auto-HSCT vs. WBRT was 79.4% vs. 90% (p=0.39), and PFS 72.9% vs. 66.2% (p=0.86), respectively.

Conclusions

The clinical profile of patients was generally consistent with previously published data, although some selection factors related to sex, age, and HIV status were noted. Most patients were treated with regimens aligned with international guidelines, though a significant proportion received suboptimal approaches. The best survival outcomes were observed in patients who achieved an objective response and subsequently underwent consolidation therapy. The choice of consolidation modality did not affect prognosis.

Table 1. Key patient and disease characteristics

Characteristics	**n=205 (100%)**
Sex	
Male	**83 (40.5%)**
Female	**122 (59.5%)**
Age at diagnosis, median (range)	**58 (27–82)**
ECOG performance status	
ECOG 1	**53 (26%)**
ECOG ≥2	**152 (74%)**
Immunocompromised status at diagnosis	
HIV-positive	**10 (5%)**
Kidney transplant	**1 (0.5%)**
History of malignancy	**4 (2%)**

MSKCC risk score	
Low risk	**27 (13%)**
Intermediate risk	**77 (38%)**
High risk	**101 (49%)**
Diagnostic procedure	
Surgical resection	**113 (55%)**
Stereotactic biopsy	**92 (45%)**
Histologic subtype	
Diffuse large B-cell lymphoma	**197 (96%)**
High-grade B-cell lymphoma	**4 (2%)**
Marginal zone lymphoma	**2 (1%)**
Burkitt lymphoma	**1 (0.5%)**
Peripheral T-cell lymphoma	**1 (0.5%)**

Figure 1. Overall survival and progression-free survival of patients with PCNSL