



# Outcomes and Prognostic Factors in Patients with Primary Mediastinal B Cell Lymphoma: An Experience from Hematology Cancer Consortium

Akhil Rajendra, MD, MBBS, DM<sup>1\*</sup>, Alok Shetty, MD, DM<sup>2\*</sup>, Anu Korula, MD, DM<sup>3\*</sup>, Hasmukh Jain, MD, DM<sup>4\*</sup>, Mobin Paul, M.D, D.M<sup>5\*</sup>, Prasanth Ganesan, M.D, D.M<sup>6\*</sup>, Jayachandran Perumal Kalaiyarasi, MD, MBBS, DM, MRCP<sup>7\*</sup>, Santhosh Kumar Devadas<sup>8\*</sup>, Sushil Selvarajan, MD, DM<sup>9\*</sup>, Abhilash Menon, MD<sup>9\*</sup>, Divya K<sup>10\*</sup>, Parathan Karunakaran, MD, DM<sup>11\*</sup>, Lingaraj Nayak, MBBS, MD, DM<sup>12\*</sup>, Om Prakash<sup>13\*</sup>, Bhausahab Bagal, MD, DM<sup>2\*</sup>, Aby Abraham, MD, DM<sup>14\*</sup>, Prasanna Samuel<sup>10\*</sup> and Uday Kulkarni, MD, DM<sup>15</sup>

<sup>1</sup>Cancer Institute WIA, Chennai, India; <sup>2</sup>Department of Medical Oncology, Tata Memorial Centre, Mumbai, India; <sup>3</sup>Department of Haematology, Christian Medical College Vellore, Vellore, India; <sup>4</sup>Department of Medical Oncology, Tata Memorial Centre, Homi Bhabha National Institute, Mumbai, India; <sup>5</sup>Department of Clinical Haematology & Hemato - Oncology, Rajagiri Hospital, Kochi, India; <sup>6</sup>Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Puducherry, India; <sup>7</sup>Cancer Institute WIA, Chennai, India; <sup>8</sup>Medical Oncology, Ramaiah Medical College & Hospital, Bengaluru, IND; <sup>9</sup>Medical Oncology, Malabar Cancer Centre, Thalassery, IND; <sup>10</sup>Biostatistics, Christian Medical College, Vellore, India; <sup>11</sup>Cancer Institute (WIA), Chennai, India; <sup>12</sup>Department of Medical Oncology, Tata Memorial Centre, MUMBAI, India; <sup>13</sup>CDMC, Christian Medical College, Vellore, India; <sup>14</sup>Department of Haematology, Christian Medical College Vellore, Vellore, Tamil Nadu, India; <sup>15</sup>Department of Haematology, Christian Medical College Vellore, Ranipet, India



## INTRODUCTION

- Treatment of PMBCL has shown dramatic improvement in survival with the use of DA-R-EPOCH
- Being a rare disease, data for PMBCL from India is minimal
- Need for admission and toxicity associated with DA-R-EPOCH makes it a resource intense protocol

## AIMS

To evaluate the clinical characteristics, treatment patterns, outcomes and prognostic factors in patients with newly diagnosed PMBCL

## METHOD

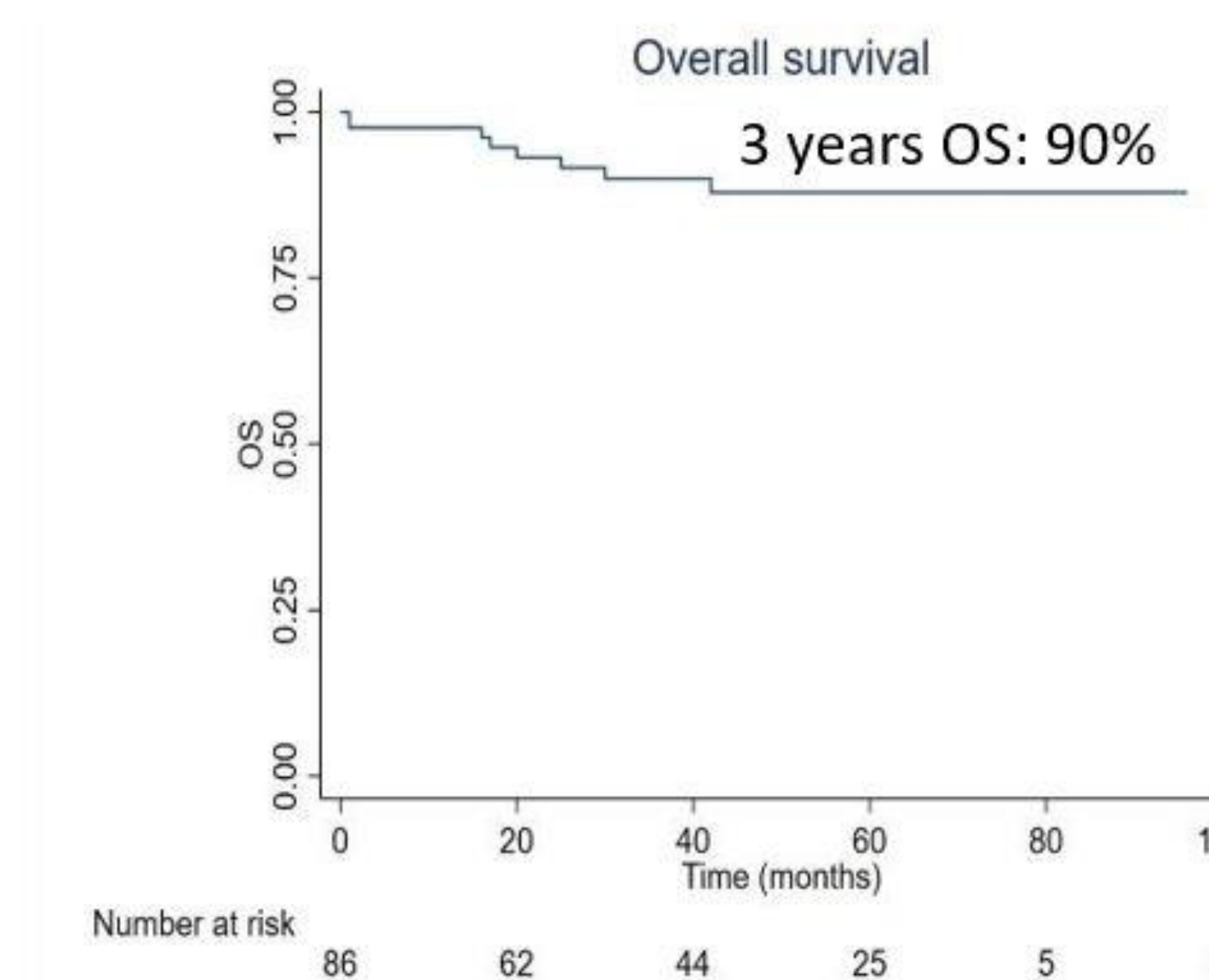
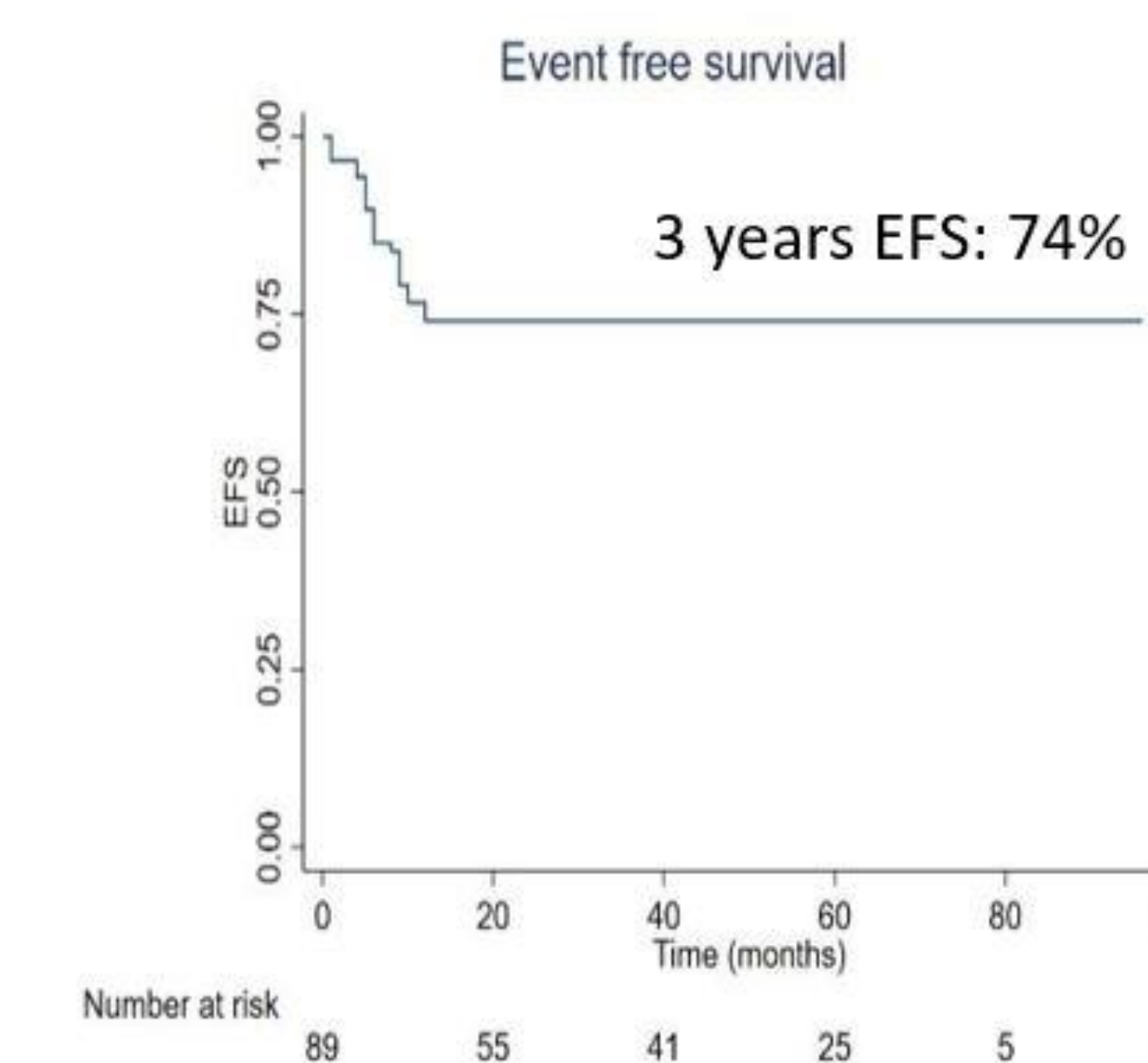
- Data collected from seven member centers of HCC ([www.hemecancer.org](http://www.hemecancer.org))
- Consecutive patients diagnosed at these centers with a diagnosis of PMBCL between 2015 – 2020
- **Primary Objective:** To evaluate 2-year EFS
- **Secondary Objective**
  - To evaluate 2-year OS
  - To evaluate the impact of age, PS, stage, treatment regimen and use of RT on the EFS and OS
  - To evaluate the end of treatment response based on the protocol used
  - To assess the treatment-related toxicities including rates of neutropenic fever, documented infections and hospitalisations

## RESULTS

Variable	N (%)
<b>Total</b>	<b>95 patients</b>
Sex	Female - 43 (45.3%)
Age	Median – 28 years IQR – 23 – 36 years
B Symptoms	Present – 42 (44.7%)
ECOG Performance status	0/1 – 56 (58.9%) 2/3/4 – 15 (15.9%)
Hemoglobin (g/dl)	Median – 12.05 IQR – 11.1 – 13.4
Albumin (g/dl)	Median – 3.9 IQR – 3.3 – 4.3
Lactate dehydrogenase (LDH) (Units/Litre)	Median – 673.50 IQR – 405 – 1115.5
Site of disease	Supradiaphragmatic disease alone – 57 (68.7%) Infradiaphragmatic disease – 26 (31.3%)
Bulky mediastinum (>7 cm)	60 (63%)
Bulky mediastinum (>10 cm)	42 (44.2%)
Extranodal involvement	21 (22.1%)
Stage	1 / 2 – 45 (47.3%) 3 / 4 – 40 (42.1%)
Prephase use	48 (50.5%)
Regimen used	DA-R-EPOCH – 79 (83.2%) R-CHOP – 9 (9.5%) COP – 1 (1.1%) CHOP E – 1 (1.1%)

Variables	N (%)
<b>Dose compromise</b>	
Yes	23 (24.2%)
No	69 (72.6%)
<b>Interim response</b>	
CR	31(32.6)
PR	29(30.5)
SD	1(1.1)
PD	1(1.1)
<b>End of Treatment Response</b>	
CR	43(45.3)
PR	26(27.4)
SD	3(3.2)
PD	7(7.4)
<b>Use of Radiation therapy</b>	
Yes	44(46.3)
No	42(44.2)
<b>Number of cycles of chemotherapy</b>	
<6	5(5.3)
>=6	85(89.5)
<b>DA-R-EPOCH Maximum Dose levels</b>	
<3	22(27.8)
>=3	51(64.6)
<b>Relapse/Progression</b>	19(20)
<b>Death</b>	8(8.4)

## Median follow-up – 35 months



Variables	Hazard ratio(95%CI); p value
<b>Univariate analysis for EFS</b>	
Achievement of CR	0.18(0.06,0.56); 0.003
Administration of chemotherapy cycles >=6	0.17(0.05,0.58); 0.005
<b>Multivariate analysis for EFS</b>	
Achievement of CR	0.18(0.06,0.56); 0.003
Administration of chemotherapy cycles >=6	0.56(0.07,4.24); 0.578

## CONCLUSIONS

- This is one of the largest datasets of PMBCL from India
- Efficacy of DA-R-EPOCH in this dataset is inferior as compared to the landmark NCI trial and the North American retrospective analysis
- Only factor impacting the outcome was the achievement of CR at the end of treatment
- Selection bias is a major limitation of this analysis

## REFERENCES

1. Vassilakopoulos TP, Pangalis GA, Katsigiannis A, Papageorgiou SG, Constantinou N, Terpos E, et al. Rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone with or without radiotherapy in primary mediastinal large B-cell lymphoma: the emerging standard of care. *The Oncologist*. 2012;17(2):239–49.
2. Savage KJ, Al-Rajhi N, Voss N, Paltiel C, Klasa R, Gascoyne RD, et al. Favorable outcome of primary mediastinal large B-cell lymphoma in a single institution: the British Columbia experience. *Ann Oncol Off J Eur Soc Med Oncol*. 2006 Jan;17(1):123–30.
3. Dunleavy K, Pittaluga S, Maeda LS, Advani R, Chen CC, Hessler J, et al. Dose-Adjusted EPOCH-Rituximab Therapy in Primary Mediastinal B-Cell Lymphoma. *N Engl J Med*. 2013 Apr 11;368(15):1408–16.
4. Jain H, Kapoor A, Sengar M, Chanana R, Menon H, Sridhar E, et al. Outcomes of Patients with Primary Mediastinal B-Cell Lymphoma Treated with Dose Adjusted R-EPOCH Regimen: A Single Centre Experience. *Indian J Hematol Blood Transfus*. 2021 Jul;37(3):379–85.

## ACKNOWLEDGEMENTS

- Monica B, CTC, HCC
- CDMC Team, CMC Vellore
- Dr Yash Shah, Senior Resident, Tata Memorial Hospital, Mumbai
- Dr Venkatraman Radhakrishnan and Dr Nikita Mehra, Department of Medical Oncology, Cancer Institute WIA, Chennai
- Dr Chandana Shajil

## CONTACT INFORMATION

**Dr Akhil Rajendra Kurup**, Assistant Professor, Department of Medical Oncology, Cancer Institute WIA, Adyar  
Email: akhilrk1989@gmail.com