

Prognostic value of Eosinophil-to-Neutrophil ratio in stage IV Melanoma

M.Maddula^{1,2,3}, I.Pires da Silva^{2,5,6}, A.M.Joshua^{3,7,8}, M.Carlino^{1,2,5,6}, J.Weij^{4,5}

1 Crown Princess Mary Cancer Centre, Westmead Hospital, Sydney, Australia; 2 Blacktown Cancer and Haematology Centre, Blacktown Hospital, Sydney, Australia; 3 The Kinghorn Cancer Centre, St Vincent's Hospital, Sydney, Australia; 4 Scientia Clinical Research, Sydney, Australia; 5 Faculty of Medicine and Health, The University of Sydney, Sydney, Australia; 6 Melanoma Institute of Australia, Sydney, Australia; 7 Garvan Institute of Medical Research, Sydney, Australia; 8 St Vincent's Clinical School, University of New South Wales, Sydney, Australia

BACKGROUND

- Stage IV melanoma remains prevalent, despite effective treatment strategies in early stages.
- Serum markers including eosinophils, neutrophils, neutrophil-to-lymphocyte ratio and baseline neutrophil-to-eosinophil ratio have demonstrated prognostic value immunosensitive cancers¹⁻⁵.
- The value of eosinophil-to-neutrophil (ENR) ratio along with longitudinal assessment is unexplored.

METHOD

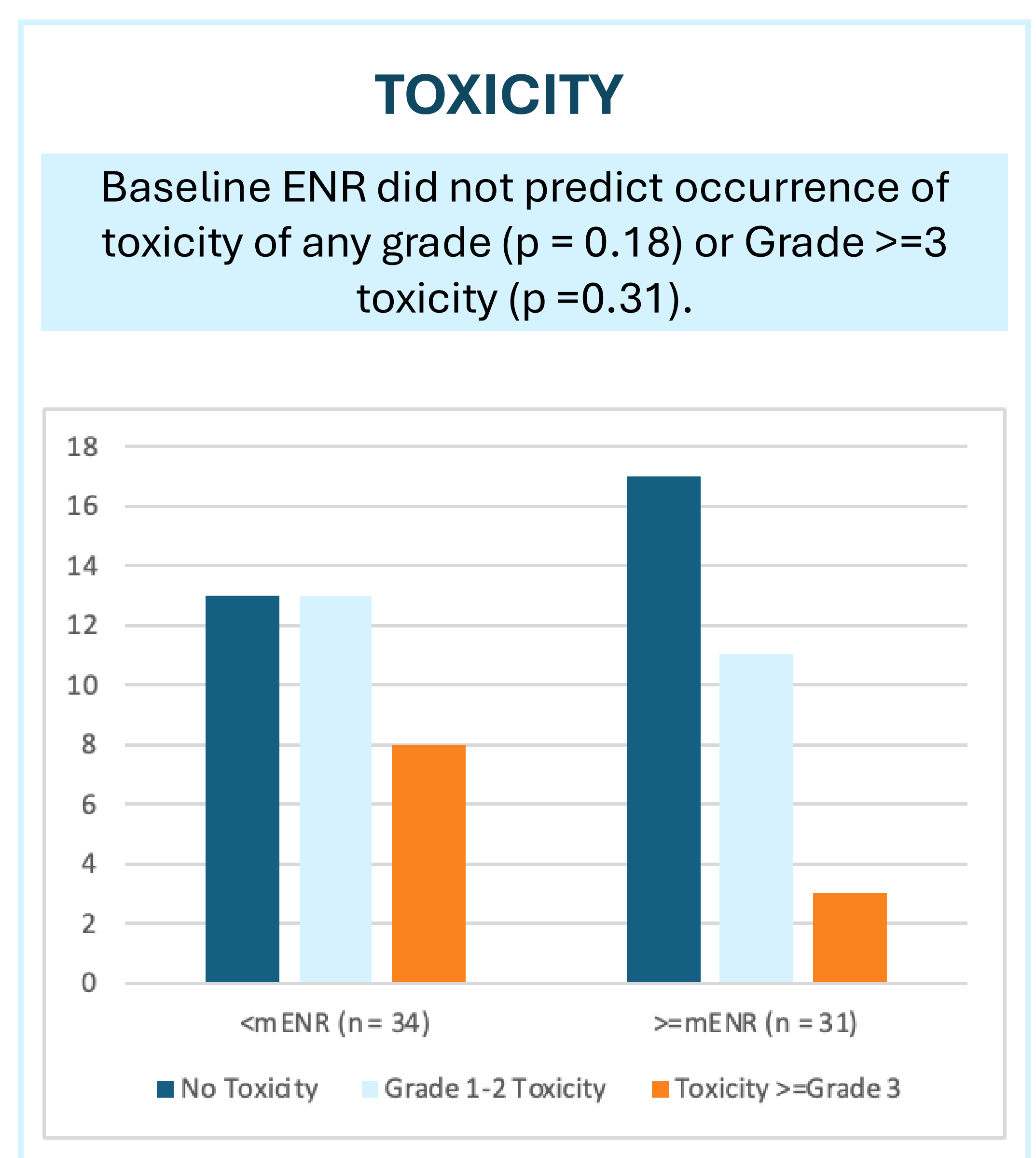
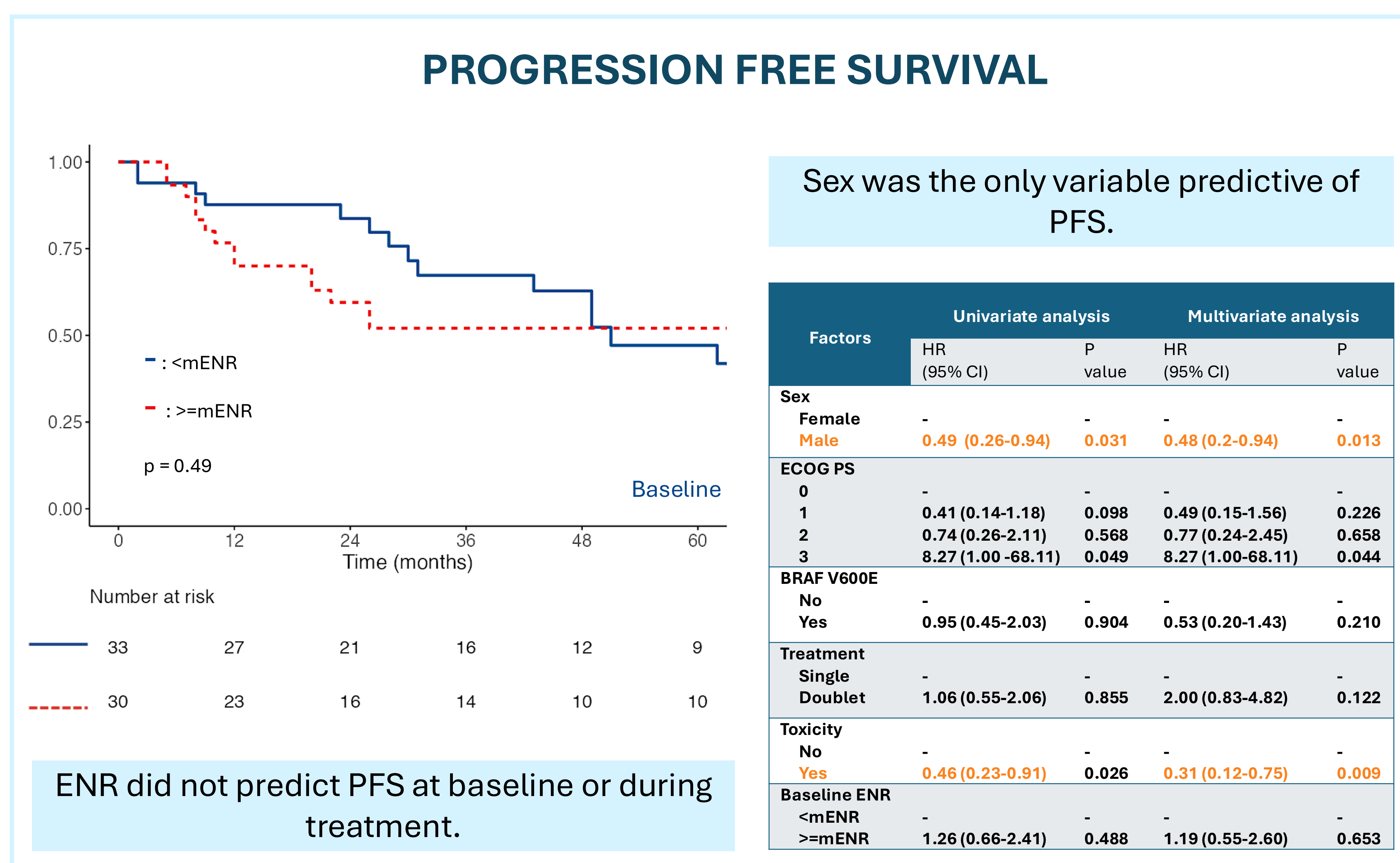
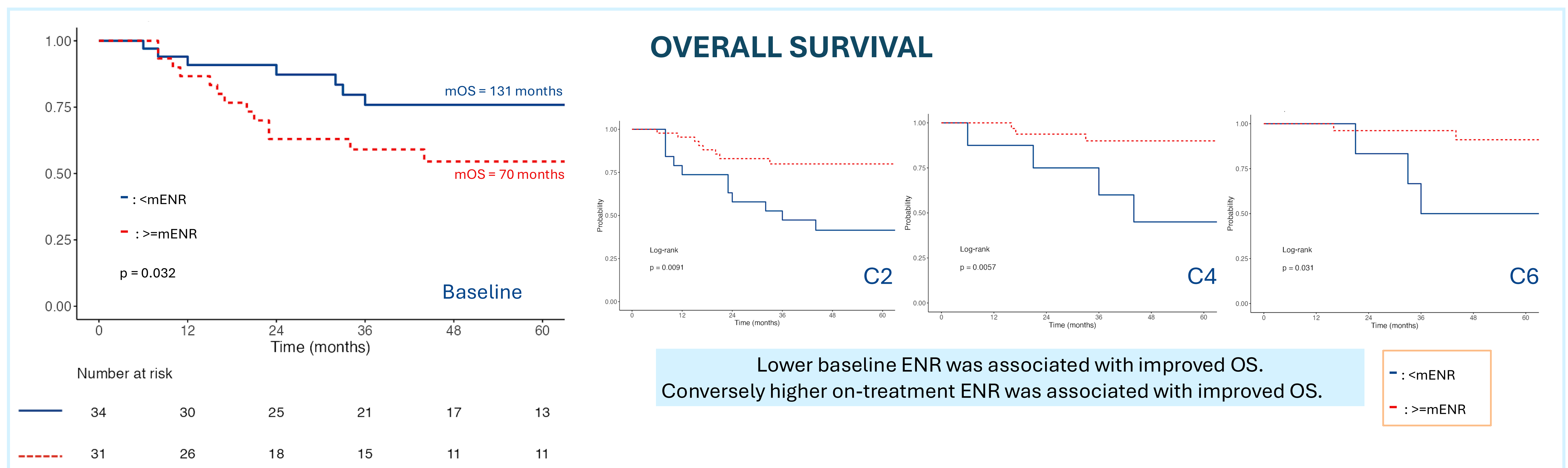
- Multi-center retrospective observational study including patients with stage IV melanoma treated with first-line immunotherapy between November 2015 – April 2023.
- Patient, disease, treatment, toxicity data and full blood count results (baseline/pre-/post- treatment to 6 cycles) were collected.
- Efficacy endpoints : overall survival (OS) and progression free survival (PFS). Stratified by baseline median ENR (<mENR vs >=mENR).

AIM

Investigate the prognostic value of eosinophil-to-neutrophil ratio in stage IV melanoma.

RESULTS

N = 65. Median follow up = 43 months. Median no. treatment cycles = 6. Baseline mENR = 0.025.



CONCLUSIONS

- In patients with stage IV melanoma treated with immunotherapy, lower baseline ENR and conversely higher post-treatment ENR was associated with improved OS.
- This study highlights the potential of ENR as a novel prognostic marker.

REFERENCES

- Tucker, Matthew D., et al. "Association of Baseline Neutrophil-to-Eosinophil Ratio (NER) and Neutrophil-to-Lymphocyte Ratio (NLR) with Response to Combination Immunotherapy (IO) with Ipilimumab plus Nivolumab (IP/NIVO) in Patients with Metastatic Renal Cell Carcinoma (MRCC)." *Journal of Clinical Oncology*, vol. 39, no. 15_suppl, 2021, pp. 4563-4563., https://doi.org/10.1200/jco.2021.39.15_suppl.4563.
- Li, Yayun, et al. "The Prognostic Significance of Baseline Neutrophil-to-Lymphocyte Ratio in Melanoma Patients Receiving Immunotherapy." *Journal of Immunotherapy*, vol. 45, no. 1, 2021, pp. 43-50., <https://doi.org/10.1097/cji.0000000000000392>.
- Gandini, Sara, et al. "Prognostic Significance of Hematological Profiles in Melanoma Patients." *International Journal of Cancer*, vol. 139, no. 7, 2016, pp. 1618-1625., <https://doi.org/10.1002/ijc.30215>.
- Ferrucci, P.F., et al. "Baseline Neutrophils and Derived Neutrophil-to-Lymphocyte Ratio: Prognostic Relevance in Metastatic Melanoma Patients Receiving Ipilimumab." *Annals of Oncology*, vol. 27, no. 4, 2016, pp. 732-738., <https://doi.org/10.1093/annonc/mdw016>.
- Pozorski, Vincent, et al. "34 Neutrophil-to-Eosinophil Ratio as a Biomarker for Clinical Outcomes in Advanced Stage Melanoma Patients Treated with Anti-PD-1 Therapy." *Regular and Young Investigator Award Abstracts*, 2022, <https://doi.org/10.1136/jitc-2022-sitc2022.0034>.