

PRESENTATION: ORAL PRESENTATION (FAST PRESENTATION) – BEST STUDY AS A YOUNG RESEARCHER

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1094 – Prognostic value of androgen receptor expression in triple-negative breast cancer: a systematic review and meta-analysis

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Introduction: Triple-negative breast cancer (TNBC) is an aggressive subtype characterized by the absence of estrogen receptor, progesterone receptor, and human epidermal growth factor receptor 2 (HER2) expression, with limited therapeutic options. TNBC exhibits high tumor heterogeneity and a worse prognosis, including early metastasis, and high recurrence and mortality rates. In this context, the expression of androgen receptor (AR) has been suggested as a potential prognostic biomarker in TNBC. ARs are steroid-dependent transcription factors, able to modulate cell proliferation, apoptosis, and tumor invasion, and may be associated with overall survival and disease-free survival in TNBC.

Objective: To investigate the prognostic value of AR in TNBC, as assessed by immunohistochemistry, through a systematic review and meta-analysis.

Methods: A systematic review was conducted according to PRISMA 2020, with a protocol registered in PROSPERO (CRD420261347726). Data were obtained from the PubMed/MEDLINE database, including 14 studies from the last ten years. Kaplan–Meier curves were reconstructed using Guyot’s algorithm. Random-effects meta-analysis with 95% confidence interval (CI) was used to assess the prevalence of AR positivity. Heterogeneity was analyzed using I^2 , with a leave-one-out sensitivity analysis. Publication bias was assessed using funnel plots and Egger’s test, and risk of bias was assessed using the Joanna Briggs Institute criteria, with analyses performed in R 4.5.2 software.

Results: The 14 studies were included in the meta-analysis ($n=1,922$), and AR expression was positive in 36.6% of the cases (95%CI 29.99–43.20; $I^2=92.5\%$). Kaplan–Meier curves demonstrated worse disease-free survival ($p=0.03$) and overall survival ($p<0.001$) in AR+ TNBC patients. Sensitivity analyses confirmed the robustness of the findings, and Egger’s test did not indicate publication bias ($p=0.53$).

Conclusion: AR expression in TNBC was associated with worse overall and disease-free survival, reinforcing its role as a potential prognostic biomarker in risk stratification and possibly guiding individualized therapeutic strategies.

Ethics: Public data – Literature review.

Registry: International Prospective Register of Systematic Reviews (PROSPERO), CRD420261347726.

Keywords: androgen receptors; survival analysis; tumor biomarkers; breast neoplasms; prognosis.