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MRI response as a surrogate for pathologic complete response in TNBC: Implications for neoadjuvant chemotherapy de-escalation

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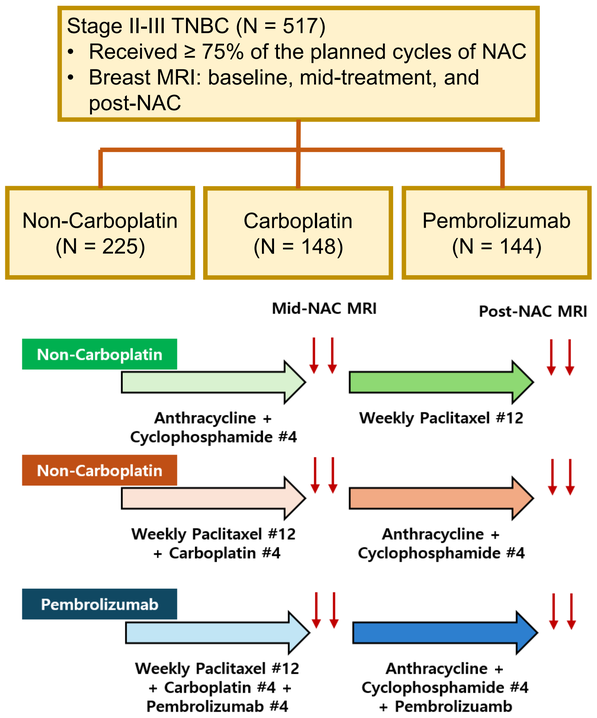
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BACKGROUND

- The incorporation of pembrolizumab into neoadjuvant chemotherapy (NAC) has significantly improved treatment response and prognosis in patients with triple-negative breast cancer (TNBC).
- Given the aggressive nature of the KEYNOTE-522 regimen, this study aimed to explore the potential for treatment de-escalation based on radiologic response during NAC.

METHODS

Stage II-III TNBC (N = 517)
- Received ≥ 75% of the planned cycles of NAC
- Breast MRI: baseline, mid-treatment, and post-NAC



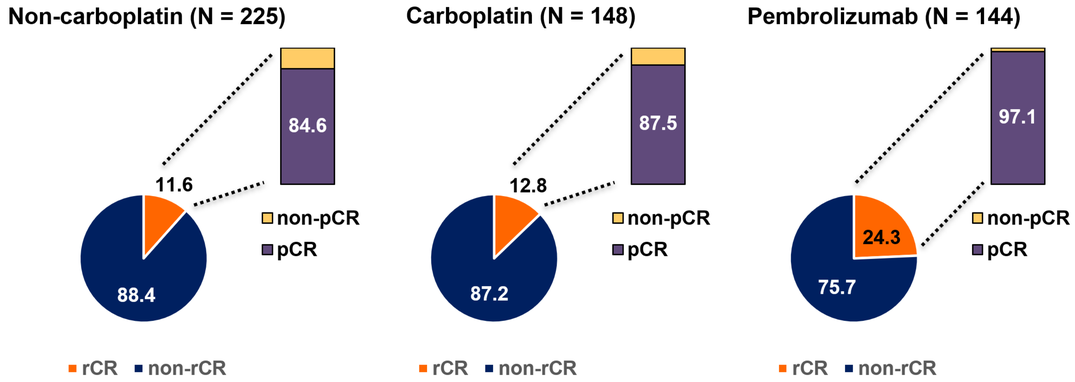
- Radiologic complete response (rCR) was defined as the absence of suspicious lesion both in the breast and axilla on breast MRI.
- Pathologic complete response (pCR) was defined as ypT0N0.

RESULTS

Mid-rCR rate (%) across the treatment regimen and pCR rate (%) in the mid-rCR group

	Adjusted OR*	95% CI	*P*-value
Mid-rCR	26.4	9.3 - 75.1	< 0.001

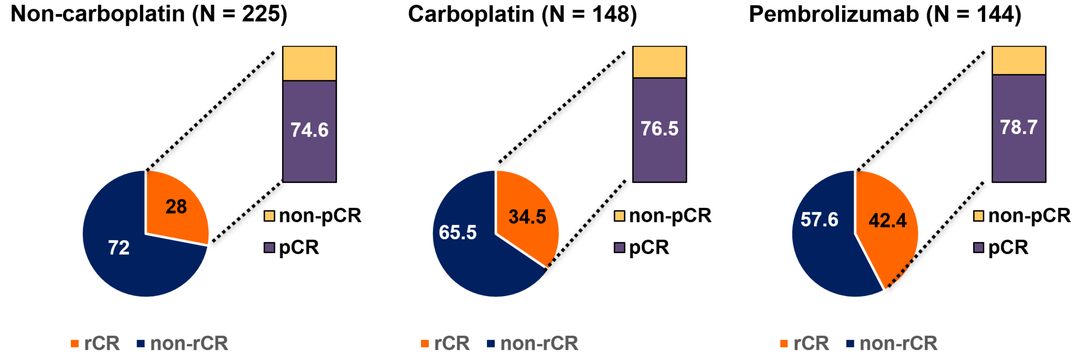
P = 0.002 (for rCR comparison)
P = 0.204** (for pCR comparison)



Post NAC-rCR rate (%) across the treatment regimen and pCR rate (%) in the Post NAC-rCR group

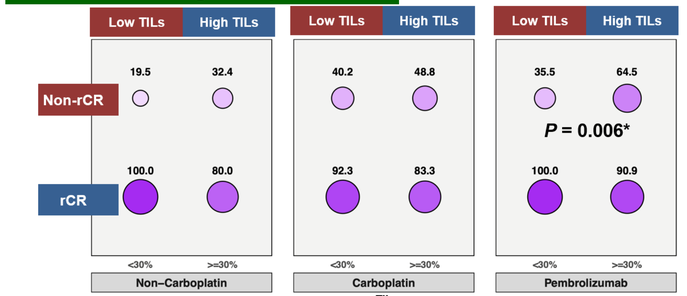
	Adjusted OR*	95% CI	*P*-value
Post NAC-rCR	8.5	5.3 - 13.6	< 0.001

P = 0.017 (for rCR comparison)
P = 0.866 (for pCR comparison)

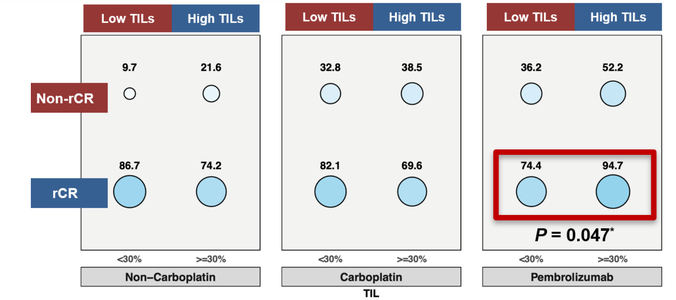


Impact of tumor-infiltrating lymphocytes (TILs) on pCR

Mid-radiologic response



Post-NAC radiologic response





CONCLUSIONS

- Mid-treatment rCR is a robust predictor for pCR in TNBC, and the addition of pembrolizumab to NAC significantly improved the rate of mid-treatment rCR. Among patients receiving the pembrolizumab with NAC, those with high TILs revealed improved diagnostic accuracy of post-NAC MRI in predicting breast pCR. Surgery de-escalation can be considered in these cases.
- These findings suggest the potential for KEYNOTE-522 regimen de-escalation based on early radiologic response, particularly in patients with high TILs.

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