RESPONSE TO NEOADJUVANT CHEMOTHERPY IN LUMINAL BREAST CANCER: IMPACT OF LUMINAL SUBTYPE ON TREATMENT RESPONSE

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OBJECTIVE

- Luminal breast cancers are typically less responsive to NACT despite biological heterogeneity.
- Hormone receptor expression and Ki-67 may affect treatment response.
- We assessed pathological response to NACT across luminal subtypes and its association with tumour biology.

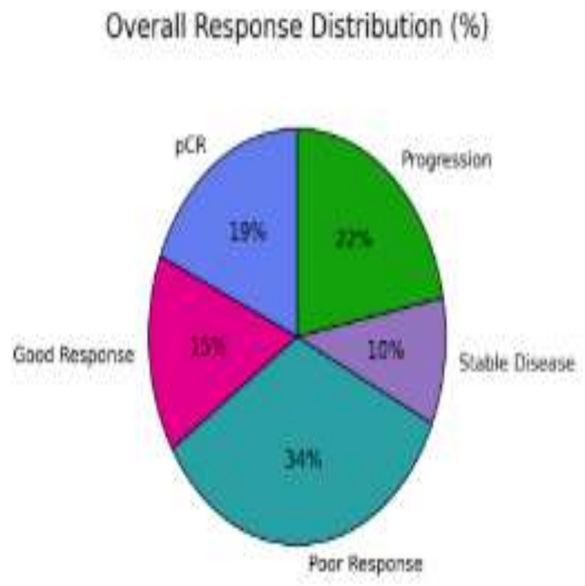
METHODS

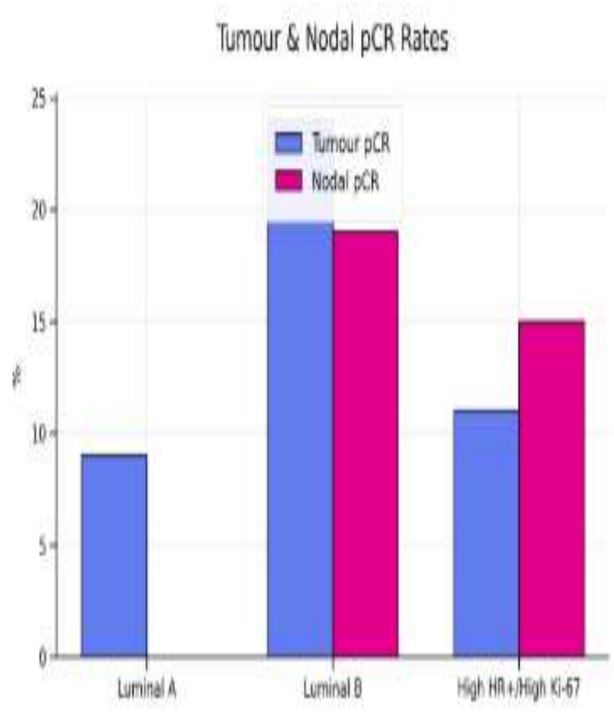
- Retrospective review of **91 patients** with hormone receptor-positive breast cancer treated with **neoadjuvant chemotherapy (NACT)** over 2 years.
- Patients were classified into three luminal subgroups based on hormone receptor expression and proliferative activity:
- **Luminal A:** ER and PR >50% with Ki-67 <20%
- **Luminal B:** ER <20%, low/absent PR, and/or Ki-67 >20%
- **HR-high/Ki-67-high:** ER and PR >50% with Ki-67 >20%
- Pathological response was categorized as:
- **pCR:** pathological complete response
- **Good response:** >60% tumour reduction
- **Poor response:** <60% tumour reduction
- **Stable disease**
- **Disease progression**
- **Nodal pCR** rates were also evaluated across subgroups.

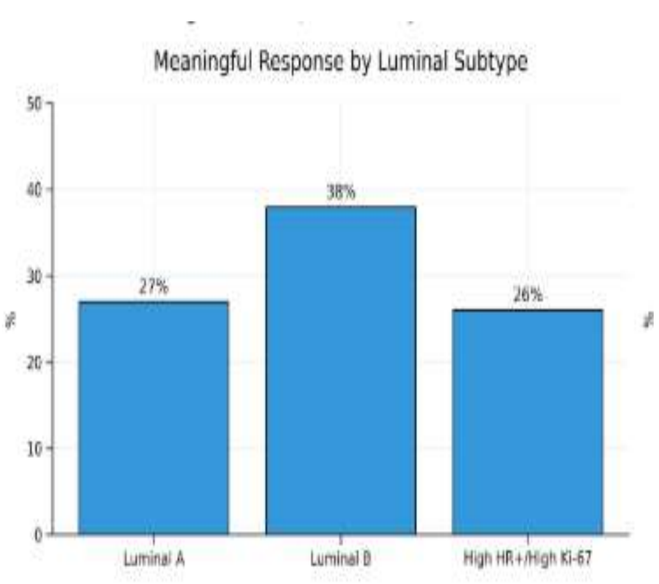
RESULTS

- **Overall (n=91)**: Tumour pCR in 18% (17/91), good response in 15% (14/91), poor response in 34% (31/91), stable disease in 10% (9/91), and progression in 22% (20/91). Only 34% (31/91) achieved a meaningful response (pCR or >60% tumour reduction).
- **Luminal A** (n=22): pCR 9% (2/22), good response 18% (4/22), **meaningful response 27% (6/22**); **poor response/stable disease/progression in 73%** overall. No nodal pCR was observed.
- **Luminal B (**n=42): pCR 24% (10/42), good response 14% (6/42), **meaningful response 38% (16/42)**; **poor response/stable disease/progression in 62%.** Nodal pCR: 19% (8/42).
- **High HR-positive/High Ki-67** (n=27): pCR 11% (3/27), good response 15% (4/27), **meaningful response 26%** (7/27); **poor response/stable disease/progression in 74%**. Nodal pCR: 15% (4/27).
- Key finding: **Luminal B tumours exhibited the highest chemosensitivity**, with superior tumour pCR, meaningful response, and nodal pCR rates compared with other luminal subgroups

RESULTS







CONCLUSION

- **Overall NACT response was modest**, with only one-third achieving pCR.
- **Luminal B showed the greatest chemosensitivity** (tumour pCR 24%, nodal pCR 19%).
- **Luminal A had the poorest response**,
- **Response differed by luminal subtype**, supporting alternative neoadjuvant strategies.

RESULTS

Luminal Sub types	*Meaningful Response*	*Poor Response/ stable disease*
Luminal A	27% (6/22)	73% (16/22)
Luminal B	38% (16/42)	62 (26/42)
High HR Positive/High Ki 67 index	26% (7/27)	74% (20/27)