Evaluation of Role of Androgen Receptor Expression in Invasive Duct Carcinoma of Breast

Thesis

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Abstract

Background: Although breast carcinoma had many targeted biomarkers for its treatment, it is a heterogenous disease with different outcomes and needs new markers especially for the triple negative group when estrogen, progesterone receptors and Her2/neu are negative. Androgen receptor is a new target with unclear role. **The aim of this study** was to examine the prevalence of androgen receptors in invasive duct carcinoma and to elucidate its relation to breast carcinoma subtypes and established clinicopathological factors. **Material and Methods:** One hundred and eleven cases of invasive duct carcinoma were evaluated for age, grade, tumor size, stage and node status. Also, they were analysed immunohistochemically for estrogen receptor, progesterone receptor, Her2/neu and androgen receptor expression. Androgen receptor expression was correlated with histopathological factors, breast cancer subtypes and 2-years DFS. **Results:** Androgen receptor was expressed in 72.1% of cases. It was significantly associated with hormone receptor(s) expression. It was also expressed in a significant number of triple negative breast carcinoma (44%). AR positive breast cancer cases have better prognosis than those with AR negative breast cancer (80% versus 67.7%). **Conclusion:** Although the impact of androgen receptor on breast cancer outcomes had not been clearly established, this result may provide evidence that androgen receptor is a good prognostic and predictive marker. AR could be a new target for the treatment of TNBC group.

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- **ADH:** Atypical ductal hyperplasia
- **AgNOR:** Argyrophilic nucleolar organizer regions
- **AJCC:** American Joint Committee on Cancer
- **ALH:** Atypical lobular hyperplasia
- **AR:** Androgen receptor
- **ASCO:** American Society of Clinical Oncology
- **ATM:** Ataxia telangiectasia mutated
- **BC:** breast cancer
- **BCS:** breast conservative surgery
- **BM:** bone marrow.
- **BMI:** body mass index
- **BrdU:** Thymidine labeling index, bromodeoxyuridine
- **CDK:** cyclin-dependent kinase
- **CISH:** Chromogenic in situ hybridization
- **DAB:** 3, 3’ diaminobenzinetetrachloride
- **DCIS:** Ductal carcinoma in situ
- **DHEA:** Dehydroepiandrosterone
- **DIN:** Ductal intraepithelial neoplasia

- **DFS:** Disease free survival
- **EGFR:** epidermal growth factor receptor
- **ELISA:** enzyme-linked immunosorbent assay
- **ER:** Estrogen receptor
- **ERK:** Extracellular-signal regulated kinase
- **ETD:** extralobular terminal duct
- **FISH:** Fluorescence in situ hybridization
- **HER2:** The human epidermal growth factor receptor 2 gene
- **HER/ErbB:** human epidermal growth factor
- **HT:** Hormonal therapy
- **H & E:** hematoxilin and eosin staining
- **IARC:** International Agency for Research and Cancer
- **IDC:** invasive ductal carcinoma
- **IHC:** immunohistochemistry
- **IM:** internal mammary node
- **ITD:** intralobular terminal duct
- **(i+):** +ve by IHC
- **Ki-67 LI:** Ki-67 labeling index
- **LBD:** ligand binding domain
- **LCIS:** Lobular carcinoma in situ

- **LIN:** Lobular intraepithelial neoplasia
- **LFS:** Li-Fraumeni syndrome
- **LN:** lymph node
- **LR:** local recurrence
- **M:** distant metastases
- **MAP kinase:** mitogen activated protein kinase
- **MoAbs:** Monoclonal antibodies
- **MRI:** Magnetic resonance imaging
- **N**: regional lymph nodes
- **NBF:** Neutral buffered formalin
- **NCCN:** National Comprehensive Cancer Network
- **NCI:** National Cancer Institute
- **NGS:** Nottingham Grading System
- **NOS:** not otherwise specified
- **NST:** no special type
- **PAI-1:** plasminogen activator inhibitor-1
- **PARP inhibitors:** Poly(ADP-Ribose)polymerase inhibitors
- **PCB's:** polychlorinated biphenyls
- **PCR:** polymerase chain reaction
- **pCR:** pathologic complete response