

# **ROLE OF ANDROGEN AND ESTROGEN RECEPTORS AS PREDICTIVE MARKERS OF RELAPSE IN PATIENTS WITH DUCTAL CARCINOMA IN SITU TREATED WITH SURGERY AND RADIOTHERAPY**

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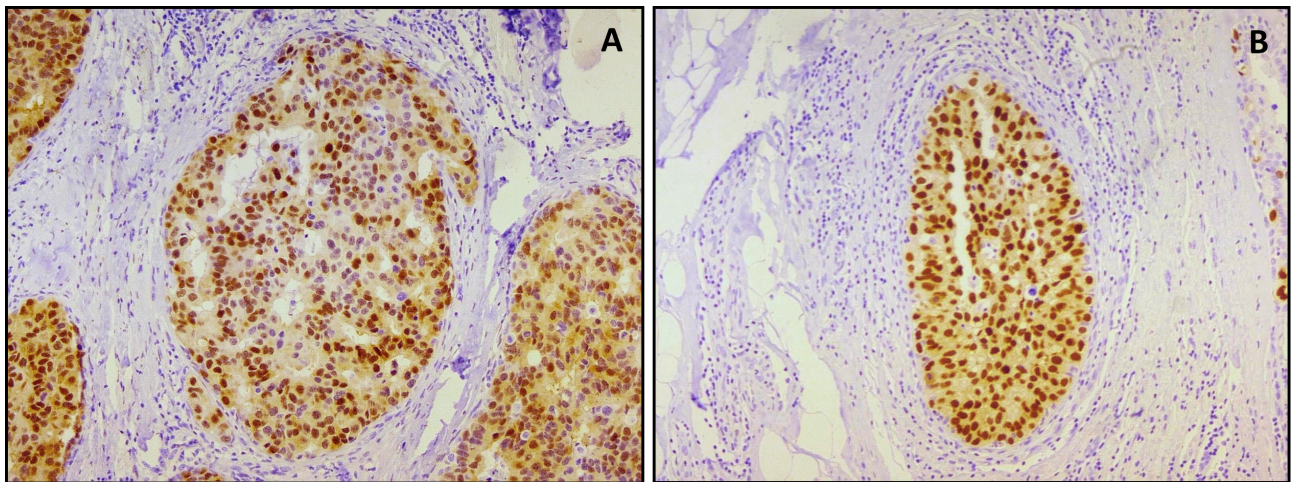
## **Abstract**

Ductal carcinoma *in situ* (DCIS) is a heterogeneous disease that has been investigated less extensively than invasive breast cancer. Women with DCIS are mainly treated with conservative surgery almost exclusively followed by radiotherapy. However, as radiation treatment is not always effective, the search for biomarkers capable of identifying DCIS lesions that could relapse or progress to invasive cancer is ongoing. Although conventional biomarkers have been thoroughly studied in invasive tumors, little is known about the role played by androgen receptors (AR), widely expressed in DCIS breast cancer. A series of 42 DCIS patients treated with quadrantectomy and

radiotherapy were followed for a period of up to 95 months. Out of these, 11 relapsed. All tumors were analyzed for clinical pathological features. Conventional biomarkers and androgen receptor expression were determined by immunohistochemistry (Figure 1).

Our results showed that AR was higher in tumors of relapsed patients than non-relapsed patients ( $p$  value: 0.0005). Conversely, estrogen receptor (ER) was higher, albeit not significantly, in non-relapsed patients than in relapsed patients ( $p$  value: 0.2342). AR/ER ratio was considerably different in the 2 subgroups ( $p$  value: 0.0033). Moreover, considering the variables separately, area under the curve values were 0.85 for AR, 0.62 for ER, and 0.80 for the AR/ER ratio.

These preliminary results highlight the potentially important role of both AR and the AR/ER ratio as predictive indicators of DCIS relapse.



**Figure 1 A) DCIS case positive for androgen receptor expression (10x magnification).  
B) DCIS case positive for estrogen receptor expression (10x magnification).**