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## ALDH1 negative/BRCA1 positive phenotype is associated with poor prognosis in invasive breast carcinomas

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**Methods:** We examined 127 breast carcinomas for expression of prospective CSC markers ALDH1, using by immunohistochemistry and correlated with clinicopathological parameters, also with the status of BRAC1 in breast carcinomas.

**Results:** Cytoplasmic expression of ALDH1 was significantly higher in aggressive tumours (p-value=0.023), whereas, no significant association was detected between expression of ALDH1 and other prognostic factors. Comparing the results for both ALDH1 and BRCA1expression showed a significant inverse association between expression of ALDH1 and BRCA, indicating that reduced BRCA1 was more often seen in breast cancer cells expressing ALDH1 (p- value= 0.044).

Combining the results for these two markers, a total of 24/110 (22%) of tumours displayed the ALDH1 + / BRCA1 -/low phenotype, this occurring more frequently in higher grade tumors. (p-value= 0.042).

**Conclusion:** Taken together, our finding suggests that increased ALDH1 was significantly more frequent in aggressive tumours and significantly correlated with reduced BRCA1 in breast carcinoma. Therefore, ALDH1 positive (cancer stem) cells with mutated BRCA1 phenotype intended to be more aggressive and this may indicate a subset of patients for whom more aggressive adjuvant treatment appropriate.