Breast cancer death rates are similar in *BRCA* mutation carriers and noncarriers

BRCA1-associated breast cancers are characterized by features that are associated with a poor prognosis; however, the effect of *BRCA1* or *BRCA2* mutations on prognosis remains unclear. A recent study by Rennert *et al.* compared the survival rates of breast cancer patients with and without a *BRCA1* or *BRCA2* mutation.

The study included 2,514 women who were diagnosed with invasive breast cancer between January 1987 and December 1988 in Israel. Pathological samples and medical records were available for 1,545 patients. *BRCA* mutations were detected in 10% of 131 Ashkenazi Jewish women; 76 had *BRCA1* mutations, 52 had *BRCA2* mutations, and 3 had mutations in both genes. The 10-year survival rates were 67% for *BRCA1* carriers, 56% for *BRCA2* carriers and, 67% for noncarriers. The risks of breast-cancer-specific death for *BRCA* mutation carriers were not significantly different from those of noncarriers; using noncarriers as the reference, the adjusted hazard ratios for death from breast cancer were 0.76 for *BRCA1* carriers and 1.31 for *BRCA2* carriers ($P = 0.31$ and $P = 0.28$, respectively). Among those patients who did not receive chemotherapy, 10-year survival rates for *BRCA1* carriers and noncarriers were similar. The 10-year survival rates for patients who received chemotherapy were 71% and 46% for *BRCA1* carriers and noncarriers, respectively ($P = 0.12$). *BRCA2* carriers had survival similar to that of noncarriers regardless of whether they received chemotherapy or not ($P = 0.87$ and $P = 0.43$, respectively).

These findings suggest that *BRCA* mutation status does not affect breast-cancer-related death rates in Israeli women.

Original article Rennert G *et al.* (2007) Clinical outcomes of breast cancer in carriers of *BRCA1* and *BRCA2* mutations. *N Engl J Med* **357:** 115–123

EGFR status and expression of downstream kinases in colorectal tumors and metastatic sites

Investigations have shown that EGFR status is not predictive of success with anti-EGFR therapies in colorectal cancer. Scartozzi *et al.* studied EGFR status and expression of the EGFR downstream kinases phosphorylated Akt and MAPK in primary colorectal tumors and their corresponding metastatic sites in order to define the EGFR-regulated molecular profile that would aid treatment selection.

The findings indicate that Akt and MAPK expression could be independent of EGFR status in both the primary and metastatic sites. A high proportion of EGFR-negative primary tumors stained positive for phosphorylated Akt or MAPK (75% for both), while many EGFR-positive primary colorectal cancers stained negative for phosphorylated Akt or MAPK (25% and 30%, respectively). Similarly, 73% and 64% of EGFR-negative metastatic samples were positive for phosphorylated Akt and MAPK, respectively, and 31% and 22% of EGFR-positive metastatic samples were negative for phosphorylated Akt and MAPK, respectively. Furthermore, Akt and MAPK status was frequently different between the primary and the corresponding metastatic sites, with 13–16% of all sites changing from positive to negative and 12–13% of all sites from negative to positive—a phenomenon that could possibly explain the failure of anti-EGFR therapy in some patients.

The authors suggest that tyrosine kinase inhibitors targeted downstream of the EGFR signaling pathway could theoretically prove more effective than anti-EGFR treatment in this cancer. Prospective trials will confirm whether the hypotheses made on the basis of this study's findings are correct.

Original article Scartozzi M *et al.* (2007) Epidermal growth factor receptor (EGFR) downstream signalling pathway in primary colorectal tumours and related metastatic sites: optimising EGFR-targeted treatment options. *Br J Cancer* **97:** 92–97

Liquid-based and conventional cytology are equivalent for cervical cancer screening

Liquid-based cytology (LBC) is widely used for the primary screening of cervical cancer, but its accuracy has not been tested in a large randomized trial. To address this situation, Ronco *et al.* conducted a randomized trial at nine cervical cancer screening centers in Italy. The study population comprised 45,174 women aged 25–60 years, 22,466 of whom were assigned to conventional cytology and 22,708 to LBC.

The percentage of women with at least one unsatisfactory cytology result was lower in the