



In BRCA mutation carriers breast conserving surgery may not be the best choice

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To the Editor,

We read with great interest the article by Cao and coworkers entitled *Risk of ipsilateral breast tumor recurrence in primary invasive breast cancer following breast-conserving surgery with BRCA1 and BRCA2 mutation in China* published online on March 2019 [1]. Authors retrospectively examined whether mutational status influences the rate of ipsilateral breast tumor recurrence (IBTR) after breast conserving surgery (BCS) in Chinese women. A cohort of 1947 patients who underwent BCS were selected with 31 BRCA1 and 72 BRCA2 mutation carriers identified among them. At a median follow-up of 80 months, no significant difference resulted in IBTR between carriers and non-carriers (3.9% vs. 2.0%, $p=0.16$). Notably, all IBTR among carriers turned out to be new primary tumors, which were significantly more frequent in carriers compared to non-carriers (3.9% vs. 0.6%, $p=0.01$). A significant difference in contralateral breast cancers was also found between carriers and non-carriers (3.9% vs. 0.8%, $p=0.01$). Finally, at multivariate analysis, BRCA mutation was the only independent risk factor for new primary tumor (HR=6.29, $p=0.002$). The authors concluded that “BCS is a rational option for Chinese women BRCA1/2 mutation carriers” [1].

Some points deserve a discussion. First of all, follow-up range was very large with a 1–192-month interval; an 80-month median follow-up means that half of the patients

had a follow-up shorter than 7 years and even as short as only 1 month. Considering this relatively short follow-up, it is difficult to reliably determine a difference in IBTR between carriers and non-carriers; in fact local control in BRCA carriers declines in the long term. As an indirect demonstration, rates of ipsilateral recurrences and contralateral breast cancers reported in the study by Cao et al. appear somewhat lower than those reported in the literature. A meta-analysis by Valachis et al. [2] including 526 mutation carriers and 2320 controls found an ipsilateral recurrence rate of 17.3% [95% confidence interval (CI) 11.4–24.2%] for BRCA mutation carriers and 11% (95% CI 6.5–15.4%) for controls ($p=0.07$) and a contralateral cancer rate of 23.7% (95% CI 17.6–30.5%) and 6.8% (95% CI 4.2–10%), respectively ($p<0.001$). Moreover Cao et al. [1] gave no details on type of surgery, pathologic margin status, use of adjuvant systemic and radiation therapy, although these factors are well recognized to be the most important ones associated with local control. In addition, the lack of significant difference in IBTR between carriers and controls may just reflect a reduced power of the study due to a small sample size: recalculated 95% CIs for carriers (1.1–9.6%) and non-carriers (1.4–2.7%) overlap each other. On the other hand, a significant difference was actually found both in new primary and contralateral breast cancer incidences between carriers and non-carriers. Lately, contralateral risk-reducing mastectomy has been demonstrated to improve survival in BRCA mutation carriers [3]. Breast-conserving therapy may be still considered a reasonable option, at least relying on mere percentages of risk. Nevertheless, a crucial aspect somewhat underestimated when looking at surgical and clinical outcomes is the emotional past of women and what they have to deal with before reintegrating back into a pre-cancer life. The fear of a new cancer with hair loss, body image alteration, further surgery, radiation, and chemotherapy is highly perceived, even more than fear of dying from breast cancer. All these issues have a strong impact on treatment preference and deserve to be discussed with patients before

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a final decision on surgery is made. Intensive surveillance with magnetic resonance imaging in BRCA mutation carriers is universally recommended; advanced stage breast cancer, especially in BRCA 2 mutation carriers, is successfully prevented and potential survival benefit is emerging.

In conclusion, when a first breast cancer is diagnosed in women carriers of a BRCA mutation, bilateral mastectomy should be proposed, particularly in BRCA 1 mutation carriers in which risk-reducing surgery may have a paramount role, altogether considering the individual patient preference.

Compliance with ethical standards

Conflict of interest F. Sardanelli has received grants from and is member of speakers' bureau/advisory board for Bayer, Bracco, and General Electric companies. R. M. Trimboli and S. Schiaffino declare that they have no conflict of interest.

Research involving human and animal participants This article does not contain any studies with human participants or animals performed by any of the authors.

References

1. Cao W, Xie Y, He Y, Li J, Wang T, Fan Z, Fan T, Ouyang T (2019) Risk of ipsilateral breast tumor recurrence in primary invasive breast cancer following breast-conserving surgery with BRCA1 and BRCA2 mutation in China. *Breast Cancer Res Treat* 175:749–754. <https://doi.org/10.1007/s10549-019-05199-8>
2. Valachis A, Nearchou AD, Lind P (2014) Surgical management of breast cancer in BRCA-mutation carriers: a systematic review and meta-analysis. *Breast Cancer Res Treat* 144:443–455
3. Vallard A, Magné N, Guy JB et al (2019) Is breast-conserving therapy adequate in BRCA 1/2 mutation carriers? The radiation oncologist's point of view. *Br J Radiol* 92:20170657. <https://doi.org/10.1259/bjr.20170657>

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