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Hong Kong Breast Cancer Foundation “Updates on Breast Cancer Management” Symposium

Summary of “SSO-ASTRO Consensus Guidance: Margins for Breast-Conserving Surgery with Whole Breast Irradiation in Stage I and II Invasive Breast Cancer”, presented by Dr. Yvonne Tsang, Consultant General Surgeon, St. Paul’s Hospital

Breast-conserving treatment (BCT) was introduced more than 40 years ago in the United States, accompanied with the advancement of the breast-imaging technology, pathology assessment and the use of systemic therapy. Together, these developments have improved patients’ clinical outcomes.

Generally speaking, patients treated with BCT followed by whole-breast radiation therapy (WBRT) showed equivalent survival to those patients treated with mastectomy for stages I and II breast cancer. However, controversy remained over the optimal margin width in BCT for invasive breast cancer. The debate has prompted the Society of Surgical Oncology (SSO), in collaboration with the American Society of Radiation Oncology (ASTRO), to undertake an evidence-based study to provide a clear and comprehensive guideline for clinicians.

The guideline was drawn up based on a meta-analysis of margin width and ipsilateral breast tumour recurrence (IBTR) that used data collected from a systematic review of 33 randomized clinical trials including 28,162 patients. The clinical trials took into account tumour histology, patient age, use of systemic therapy and technique of radiation therapy. Findings of the meta-analysis showed that positive margins (ink on invasive carcinoma or ductal carcinoma in situ) were associated with a two-fold increase in the risk of IBTR compared to negative margins (no ink on tumor). This increased risk was not mitigated by favourable biology, endocrine therapy or a radiation boost. Meanwhile, compared to no ink on tumour, more widely clear margins did not significantly decrease the rate of IBTR. Furthermore, there was no evidence showing more widely clear margins would reduce IBTR among young patients, or patients with unfavourable biology, lobular cancers or cancers with an extensive intraductal component.

The guideline recommended the use of "no ink on tumour" as a criteria for adequate (or apparent) margin in invasive cancer, given multidisciplinary therapy was associated with low rates of IBTR and had the benefits to cut re-excision rates, improve cosmetic outcomes and lower healthcare costs. Following this guideline would therefore avoid unnecessary surgical margin re-excisions and maintain excellent clinical outcomes in BCT. The guideline would serve as a reference to the profession.

The results of the meta-analysis also showed that endocrine or biologically targeted therapy, or systemic chemotherapy reduced the rates of IBTR, but there was no evidence suggesting that margins wider than no ink on tumor were needed in the uncommon circumstance of a patient not receiving

adjuvant systemic therapy. When it comes to radiation therapy, the choice of WBRT technique, fractionation, and boost dose should not be dependent on the margin width. The guideline also underscored the association between young age (≤ 40 years) of patients and both an increased IBTR rate after BCT as well as an increased chance of local relapse on the chest wall after mastectomy, but there was no evidence that a wider margin would nullify the higher risk of IBTR in young patients.

While a consensus on the optimal margin width in BCT is yet to be reached, the guideline can be taken as a point of reference for designing a suitable, personalized treatment plan for patients.

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References:

- Darby, S., McGale, P., Correa, C., Taylor, C., Arriagada, R., Clarke, M., et al. (2011). Early Breast Cancer Trialists' Collaborative Group (EBCTCG): Effect of radiotherapy after breast-conserving surgery on 10-year recurrence and 15-year breast cancer death: Meta-analysis of individual patient data for 10,801 women in 17 randomized trials. *Lancet*, *378*, 1707-1716.
- Fisher, B., Anderson, S., Bryant, J., Margolese, R.G., Deutsch, M., Fisher, E.R., et al. (2002). Twenty-year follow-up of a randomized trial comparing total mastectomy, lumpectomy, and lumpectomy plus irradiation for the treatment of invasive breast cancer. *The New England Journal of Medicine*, *347*, 1233-1241.
- McCahill, L.E., Single, R.M., Aiello Bowles, E.J., Feigelson, H.S., James, T.A., Barney, T., et al. (2012). Variability in reexcision following breast conservation surgery. *The Journal of the American Medical Association*, *307*, 467-475.
- Moran, M.S., Schnitt, S.J., Giuliano, A.E., Harris, J.R., Khan, S.A., Horton, J., et al. (2014). Society of surgical oncology-American society for radiation oncology consensus guideline on margins for breast-conserving surgery with whole-breast irradiation in stages I and II invasive breast cancer. *The Annals of Surgical Oncology*, *21*, 704-716.
- Morrow, M., Jagsi, R., Alderman, A.K., Griggs, J.J., Hawley, S.T., Hamilton, A.S., et al. (2009). Surgeon recommendations and receipt of mastectomy for treatment of breast cancer. *The Journal of the American Medical Association*, *302*, 1551-1556.