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EDITORIAL

Surgical Oncologists: An Endangered Species at the Time of De-Escalation

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The buzzword today is "de-escalation" in the treatment of breast cancer. However when analyzing recent publications, one can realize that (Table 1)¹⁻² breast cancer will increase by 35% worldwide by 2040, to reach a figure of 2846000 new cases per year.

At the same time, 4 times as many surgeons and 5.5 times as many anaesthetists will be missing to treat all these new cancers mainly in low- and

middle- income countries at a time when the number of new cancer surgeons is also decreasing in Western countries. The attraction of cancer specialities is going less and less in a way that the first choices of residents in France being plastic and aesthetic surgery, dermatology and ophthalmology, no emergencies and a high income. This is the dream of our young colleagues!

| | % indication de chirurgie | Incidence | Indic de chir | Incidence | Indic chir | Augmentation | % |
|----------|---------------------------|-----------|---------------|-----------|------------|--------------|-----|
| | de chirurgie | 2018 | 2018 | 2040 | 2040 | | |
| Sein | 97% | 2088000 | 2026000 | 2833000 | 2748000 | 722000 | 36% |
| Melanome | 97% | 287000 | 279000 | 387000 | 376000 | 97000 | 35 |
| Utérus | 85% | 382000 | 324000 | 50000 | 425000 | 10000 | 31 |
| Ovaires | 83% | 295000 | 245000 | 412000 | 342000 | 97000 | 40 |

The multidisciplinary management was a considerable progress in the management of new cancers and it allows to treat a cancer in the most appropriate way, for a given patient in the most appropriate way, for instance in discussing the neoadjuvant indication for chemotherapy.

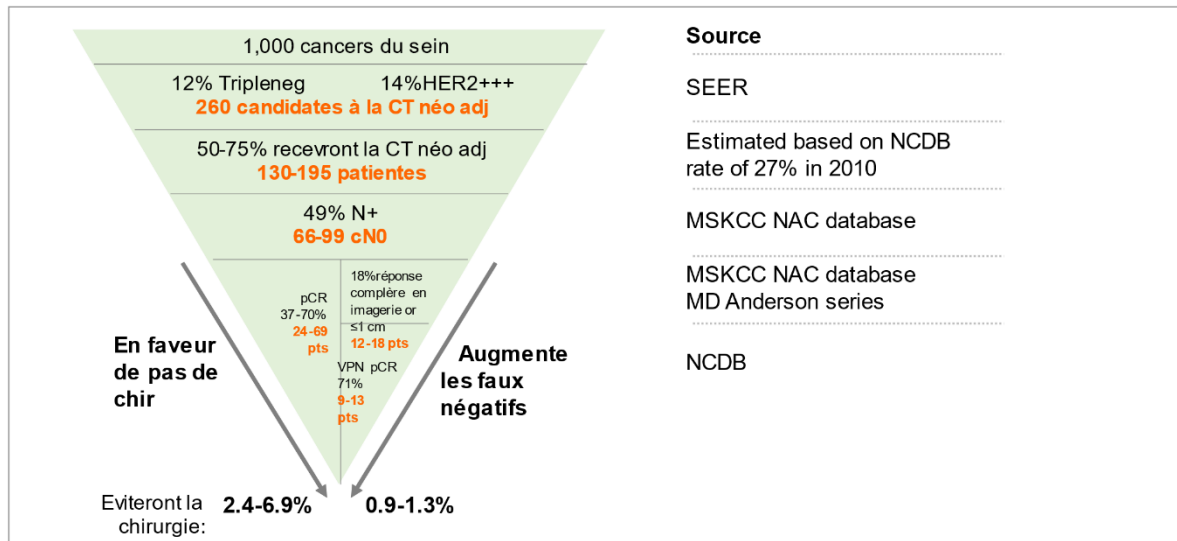
According to NHS Breast Predict test (available on the internet), the percentage of cure at 5 and 10 years is always higher with surgery for most luminal cancers than with other hormonal and chemotherapy treatments, which tends to prove that surgeons remain indispensable.³

As far as surgery is concerned, no one disputes the de-escalation that has occurred since William Halsted at the end of the 19th century. Total mastectomy with pectoral resection and extensive lymph node dissection gave way to the modified radical mastectomy of Patey.² The development of radiotherapy allowed for conservative treatments from the 1970s and 1980s, the aesthetic results of which were improved by oncoplasty in the 1990s. Large lymph node dissection is disappearing in favor of sentinel lymph nodes. However, a major turning point came at the

end of the 1980s with the first publications on neoadjuvant treatments. Giving chemotherapy before surgery allowed for in vivo testing of the efficacy of the drugs and for a decrease in the size of the tumor, allowing for conservative treatment where amputation was initially essential. Dr. Jacquillat⁴, who did not like surgery for breast cancer, proposed to his patients who had responded well to the medical treatment, not to be operated on and to receive an irradiation with a boost on the tumor bed. One of his publications was called "Non-surgical treatment of operable breast cancers"!

Time has passed and neoadjuvant treatments have become more and more targeted, effective, and a complete histological response is not uncommon, especially in HER2 overexpressing cancers receiving Trastuzumab, Pertuzumab and more recently in triple negative cancers receiving immunotherapy. Should we therefore continue to operate on these cancers that are in complete response after a well-adapted targeted treatment and should we continue to remove axillary nodes

that have been sterilized by these same chemotherapies?



BK. Killelea, *JCO* 2015;33:4267 ; S. Sun, *Ann Surg Oncol* 2019;26:3071 ; AU. Barron, *JAMA Surg* 2018;153:1120

Many therapeutic trials are underway to try to answer this question.

The first difficulty is imaging. Ultrasound, MRI, PET Scan, are used to evaluate this complete response and, depending on the team, the false negative rate varies between 10 and 30%.

The number of patients who have a complete response after neoadjuvant treatment varies according to histological type, reaching 50-75% in HER2 and triple negative tumors using targeted treatments and immunotherapy. The importance of imaging and the possibility of identifying suspicious axillary nodes radiologically by clips or other magnetic seeds is not universally available due to the cost of these examinations.

Patients must then undergo active, regular and prolonged surveillance, which can become very distressing for patients when changes in breast or axillary images appear. Here again, the cost of these repeated examinations is not negligible.

Obviously, in case of conservative treatment, irradiation becomes necessary and discussions may arise on the interest of the boost on the site of the tumor that has disappeared.

Finally, there is still insufficient experience with this type of strategy to make it widely available and we have to wait for the results of on going trials to made this "non operative" approach ethically acceptable.

Monica Morrow, from the Memorial Sloan Kettering Center in New York, humorously said, "What is the problem with doing a lumpectomy with a sentinel lymph node, which provides precise information on the histological response, makes it

possible to evaluate the margins of the excision, lasts less than an hour, is inexpensive and therefore makes it possible to make a correct evaluation with a serene follow-up"(fig 2).

If we add to this fact that neo-adjuvant treatment remains disappointing in terms of complete histological response in the majority of luminal A and B cancers and lobular cancers, this non-operative attitude must still be accepted with caution and if it is adopted, patients must still be included in therapeutic trials to validate or not this approach. Neo adjuvant strategy is not applicable in intra ductal cancers. The ultimate goal of a multidisciplinary approach should not be to not operate, but to apply to each patient the treatment that will give her the best survival with the minimum of physical and psychological sequelae.

However, oncology is constantly evolving and in radiotherapy, COVID pandemia helped to develop radiotherapy hypo fractionation decreasing the 6 weeks treatment to 15 fractions and even 5 fractions in the Fast and Fast forward trials in post operative treatment. More recently localized partial irradiations, (APBI) associated with medical treatment, have made it possible to obtain complete responses in selected patients. The recent explosion of new molecules on the market, immunotherapy, CDK4/6 inhibitors, conjugated antibodies, have temporarily eliminated the notion of medical de-escalation. Their exact interferences between these molecules and surgery remains to be discovered to offer the best theranostic approach to each given patient.

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