

Supplementary File

Appendix A: Survey

1. Do you consider yourself as a referent in senology? Yes/No
2. How many breast cancer cases are treated per year in your institution?
3. In your institution, the senology files are presented to a technical committee of radiotherapy:
 - a. Systematically
 - b. Only for specific cases
 - c. Never
4. Do you perform whole breast/chest wall irradiation in three-dimensional radiotherapy (3DRT)? Yes/No
5. Do you use a monoisocentric technique for 3DRT?
 - a. Yes, systematically
 - b. According to particular cases
 - c. No, never
6. Do you perform chest wall irradiations with electron beams?
 - a. a. Yes, systematically
 - b. b. Yes, sometimes
 - c. c. No
7. When do you use intensity modulated radiation therapy (IMRT)?
 - a. Systematically
 - b. Pectus excavatum
 - c. Bilateral whole breast/chest wall irradiation

- d. Bilateral whole breast/chest wall and lymph node area irradiation
 - e. Left whole breast/chest wall irradiation
 - f. Whole breast/chest wall and lymph node area irradiation
 - g. Left whole breast/chest wall and lymph node area irradiation
 - h. Never
8. When necessary, do you perform a tumor bed boost:
- a. Simultaneously
 - b. Sequentially
9. What are the two most common techniques used in your department to perform a tumor bed boost:
- a. Brachytherapy
 - b. External photon irradiation
 - c. External electron irradiation
10. Do you perform partial breast irradiation (excluding trial)? Yes/No
11. If yes, what technique(s) do you use?
- a. Brachytherapy
 - b. External radiotherapy
 - c. Intraoperative irradiation
12. If isolated pNi+ cells are involved after the sentinel node procedure followed by axillary lymph node dissection, you would irradiate:
- a. The internal mammary chain
 - b. The supraclavicular area
 - c. The axillary area
 - d. No lymph node irradiation

13. In the case of microscopic pNmi involvement after the sentinel node procedure followed by axillary lymph node dissection, you would irradiate:
- The internal mammary chain
 - The supraclavicular area
 - The axillary area
 - No lymph node irradiation
14. In the case of macroscopic pN+ involvement after the sentinel node procedure followed by axillary lymph node dissection with less than 5 out of 10 affected lymph nodes removed, you would irradiate:
- The internal mammary chain
 - The supraclavicular area
 - The axillary area
 - No lymph node irradiation
15. If isolated pNi+ cells are affected after sentinel node procedures without axillary lymph node dissection, you would irradiate:
- The internal mammary chain
 - The supraclavicular area
 - The axillary area
 - No lymph node irradiation
16. In the case of microscopic pNmi involvement after the sentinel node procedure without axillary lymph node dissection, you would irradiate:
- The internal mammary chain
 - The supraclavicular area
 - The axillary area

d. No lymph node irradiation

17. In the case of a pT2 tumor with macroscopic axillary pN+ involvement after the sentinel node procedure without axillary lymph node dissection, you would irradiate:

- a. The internal mammary chain
- b. The supraclavicular area
- c. The axillary area
- d. No lymph node irradiation
- e. Need additional information

18. If axillary irradiation is necessary, you would irradiate using:

- a. Breast high tangential beams
- b. Enlarged supraclavicular beams
- c. Specific beams
- d. Intensity modulated radiotherapy
- e. Other

19. What criteria do you consider relevant for irradiation of the axillary lymph node area:

- a. Axillary lymph node dissection with < 4 lymph nodes removed in total
- b. Axillary lymph node dissection with < 7 lymph nodes removed in total
- c. Axillary lymph node dissection with < 10 lymph nodes removed in total
- d. At least 7 lymph nodes affected
- e. At least 10 lymph nodes affected
- f. At least 50% of affected lymph nodes
- g. Other

20. Indicate in the context of infiltrating breast cancer in which situation you would practice hypofractionated irradiation (excluding therapeutic trials):

- a. Chest wall only
- b. Whole breast +/- boost
- c. Chest wall and regional node areas
- d. Whole breast and regional node areas

21. Concerning the boost in the context of hypofractionated irradiation, you prescribe:

- a. 10 Gy/5 fractions of 2 Gy
- b. 10 Gy/4 fractions of 2.5 Gy
- c. 16 Gy/8 fractions of 2 Gy
- d. Other

22. Concerning the prescription in the case of hypofractionated irradiation after surgical treatment, which regimen(s) do you use?

- a. 42.5 Gy/16 fractions in 22 days, 2.66 Gy per fraction
- b. 41.6 Gy/13 fractions in 5 weeks, 3.2 Gy per fraction
- c. 40 Gy/15 fractions in 3 weeks, 2.66 Gy per fraction
- d. 39 Gy/13 fractions in 3 weeks, 3 fractions per week, 3 Gy per fraction
- e. Other

Table S1. Indications for lymph node irradiation according to French, European and American guidelines and the regional lymph node irradiation rates according to axillary involvement in our survey and the Belkacémi survey

	n (%)	NORA survey n (%)	Guidelines
Nodal RT volumes according to SLN status (with ALND)			
pNi+	IMN-RT: 2 (8%) SCN-RT: 4 (15%) ALN-RT: 0 (0%)	IMN-RT: 0 (0%) SCN-RT: 3 (4%) ALN-RT: 3 (4%)	French: no regional node irradiation. ESMO and NCCN: not specified
pNmi	IMN-RT: 4 (15%) SCN-RT: 9 (35%) ALN-RT: 1 (4%)	IMN-RT: 2 (2%) SCN-RT: 20 (24%) ALN-RT: 6 (7%)	French: no regional node irradiation. ESMO and NCCN: not specified

pNmacro	<p>IMN-RT: 16 (69%) SCN-RT: 26 (100%) ALN-RT: 4 (15%)</p>	<p>IMN-RT: 11 (13%) SCN-RT: 7 (8%) ALN-RT: 12 (14%)</p>	<p>French: systematic SCN-RT. The irradiation of IMN is according to the benefit/risk ratio. After ALND: massive lymph node involvement; less than 10 lymph nodes removed and should be discussed on a case-by-case basis.</p> <p>ESMO: Comprehensive nodal RT is recommended for patients with involved lymph nodes. After ALND, the resected part of the axilla should not be irradiated, except in cases of clear residual disease after surgery.</p> <p>NCCN: Radiation therapy to infraclavicular area, supraclavicular area, IMN, and any part of the axillary bed at risk.</p>
Nodal RT volumes according to SLN status (without ALND)			
pNi+	<p>IMN-RT: 3 (11%) SCN-RT: 6 (23%) ALN-RT: 3 (11%)</p>	<p>IMN-RT: 1 (1%) SCN-RT: 7 (8%) ALN-RT: 12 (14%)</p>	<p>French: no regional node irradiation.</p> <p>ESMO and NCCN: not specified</p>
pNmi	<p>IMN-RT: 4 (15%) SCN-RT: 9 (35%) ALN-RT: 5 (19%)</p>	<p>IMN-RT: 4 (5%) SCN-RT: 29 (34%) ALN-RT: 29 (34%)</p>	<p>French: No indication for ALN-RT, high tangential fields are recommended. Indication of SCN and IMN irradiation to be discussed in each case.</p> <p>ESMO and NCCN: evaluate other patient risk factors when considering RT.</p>

pNmacro	<p>IMN-RT: 12 (46%)</p> <p>SCN-RT: 17 (65%)</p> <p>ALN-RT: 14 (54%)</p>	<p>IMN-RT: 13 (15%)</p> <p>SCN-RT: 55 (65%)</p> <p>ALN-RT: 48 (57%)</p>	<p>French: indication of irradiation of SCN and ALN. The irradiation of IMN is according to the benefit/risk ratio.</p> <p>ESMO: comprehensive nodal RT is recommended for patients with involved lymph nodes. After a positive SLND without subsequent ALND, regional RT is advised. Which axillary lymph node levels should be irradiated can be defined based on the presence of other risk factors including the extent of nodal involvement, tumor diameter, tumor grade, vascular invasion and tumor site.</p> <p>NCCN: radiation therapy to infraclavicular area, supraclavicular area, internal mammary nodes, and any part of the axillary bed at risk. Meets all criteria from the ACOSOG Z0011 trial: no ALN-RT (consider tangents/high tangents). Does not meet all criteria from the ACOSOG Z0011 trial: For patients with clinically negative axilla who are undergoing mastectomy and for whom RT is planned, axillary radiation may replace axillary dissection level I/II for regional control of disease.</p>
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ACOSOG — College of Surgeons Oncology Group; ALND — axillary lymph node dissection; ALN-RT — axillary lymph node irradiation; ESMO — European Society For Medical Oncology; IMN-RT: internal mammary node irradiation; NCCN — National Comprehensive Cancer Network; NORA — NOdal Radiotherapy; SCN-RT — supraclavicular irradiation; RT — radiotherapy