



Radiation oncology crossword: breast cancer

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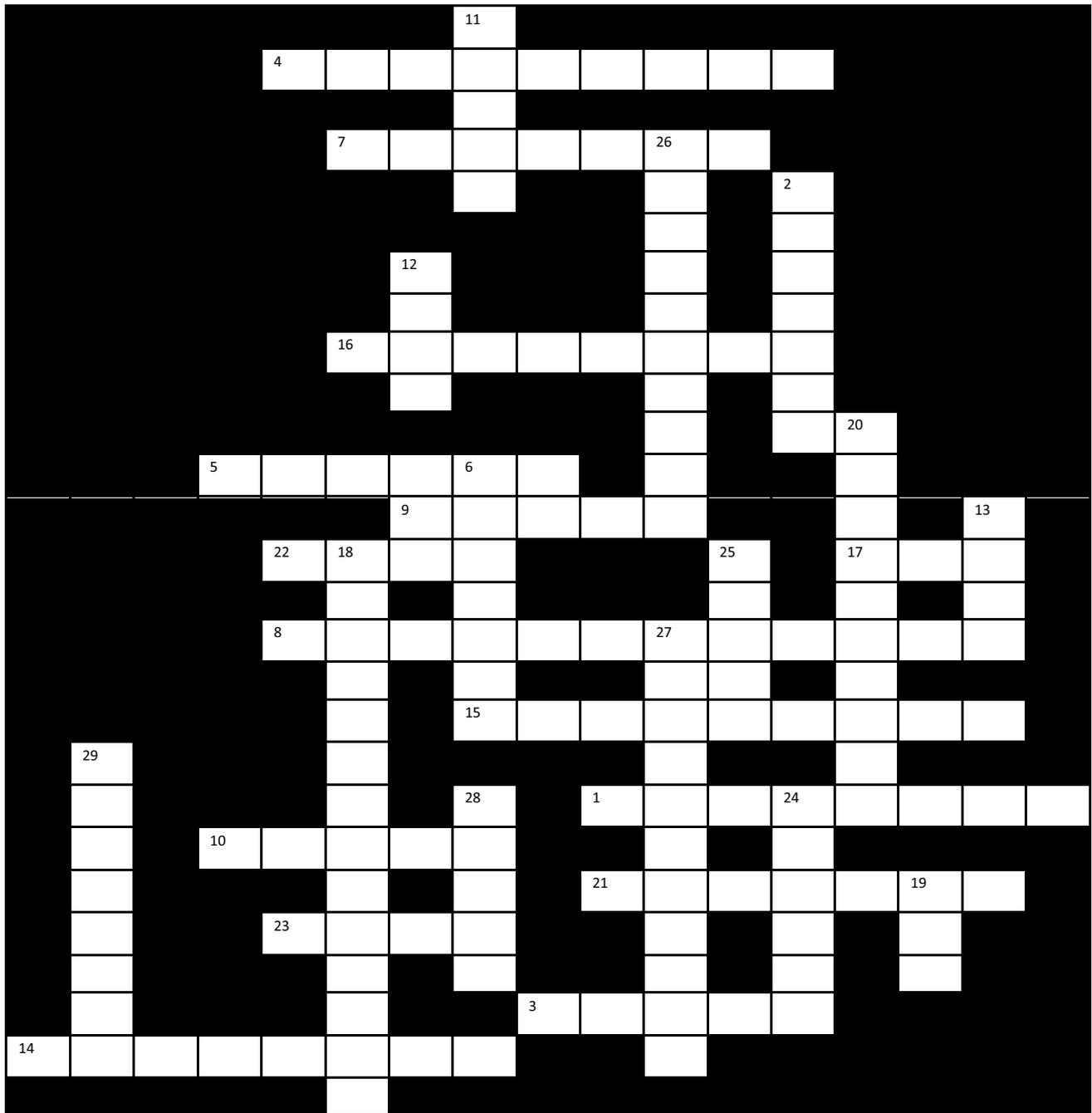
Received: 22 May 2019 / Accepted: 28 May 2019 / Published online: 1 June 2019
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This is presented as a continuation of our homage to the original Radiation Oncology crossword, updated to reflect the changes in our field in the quarter century since [1].

Following our recent focus on the central nervous system and genitourinary cancer, the focus of this edition is breast cancer [2, 3].

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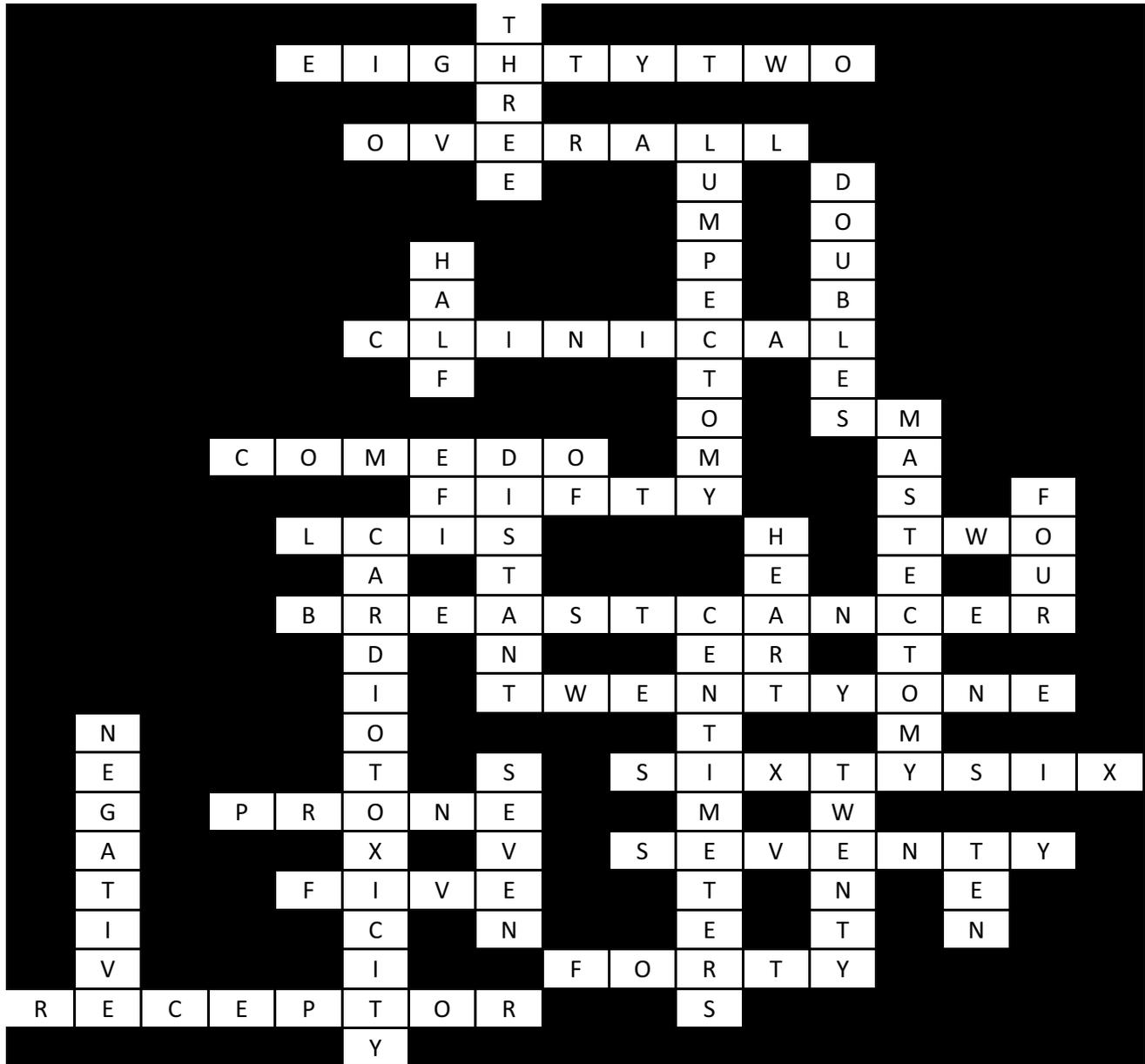
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1. Following standard of care treatment, the optimal radiation dose for achieving locoregional control for inflammatory breast cancer patients with margins less than 2 mm is ___ Gy [4].
2. In inflammatory breast cancer patients with less than a partial response to chemotherapy, the risk of developing a late Grade 3 or 4 complication with this optimal locoregional control dosage approximately _____ compared to lower doses [4].
3. In Stage I and II breast cancer patients undergoing breast-conserving therapy, the age group benefitting most from a radiotherapy boost at 10-year follow-up (reduced local recurrence, reduced need for salvage mastectomy) are patients of age ___ and younger [5].
4. Following breast-conserving therapy in Stage I and II breast cancers, the 10-year overall survival in patients not receiving a radiotherapy boost was 82%, compared

- to ____ % in patients receiving a radiotherapy boost [5].
5. The ductal carcinoma in situ (DCIS) histological subtype with the worst prognosis is ____ [6].
 6. At 10 years, the addition of comprehensive nodal (internal mammary and medial supraclavicular lymph nodes) RT to lymph node positive or high-risk lymph node negative breast cancer patients improved ____ disease-free survival [7].
 7. At 10 years, the addition of comprehensive nodal (internal mammary and medial supraclavicular lymph nodes) RT to lymph node positive or high-risk lymph node negative breast cancer patients did not improve ____ survival [7].
 8. At 10 years, the addition of comprehensive nodal (internal mammary and medial supraclavicular lymph nodes) RT to lymph node positive or high-risk lymph node negative breast cancer patients improves ____ mortality ([7]; two words).
 9. At 10 years, the addition of comprehensive nodal (internal mammary and medial supraclavicular lymph nodes) RT to lymph node positive or high-risk lymph node negative breast cancer patients is proven at ____ Gy [7].
 10. Large-chested breast cancer patients can be treated in the ____ position to reduce radiation dosage to the chest wall [8].
 11. The breast cancer-specific mortality for DCIS at 20 years is ____ % [9].
 12. Adding radiotherapy to breast-conserving surgery in DCIS reduces the relative risk for ipsilateral breast tumor recurrence by ____ [10].
 13. The 10-year actuarial rate of isolated locoregional recurrence in patient's status post-mastectomy and doxorubicin-based chemotherapy with zero involved lymph nodes is ____ % [11].
 14. According to the National Comprehensive Cancer Network guidelines, for T1-2N0 disease, ____ status is not a criterion for implementing postmastectomy RT [12].
 15. The 10-year actuarial rate of isolated locoregional recurrence in patient's status postmastectomy and doxorubicin-based chemotherapy with 4–9 involved lymph nodes is ____ % [11].
 16. Inflammatory breast cancer is a ____ diagnosis [13].
 17. The standard adequate negative margin for patients treated with breast-conserving surgery plus whole-breast RT is ____ mm [14].
 18. The risk of ____ with trastuzumab (Herceptin) is 3%, and increases if administered concomitantly with doxorubicin [15].
 19. For patients receiving postmastectomy RT to a tissue expander prior to implant, RT increases grade 3–4 capsular contraction to 22% from ____ % [16].
 20. According to the National Comprehensive Cancer Network guidelines, anything less than chemotherapy and ____ for inflammatory breast cancer prior to RT is below the standard of care [12].
 21. Adjuvant RT can be safely omitted in breast cancer patients with estrogen receptor-positive T1N0 disease, who are older than age ____, according to the National Comprehensive Cancer Network guidelines [12].
 22. Given the low incidence of developing invasive tumors, patients with ____ are not routinely treated with RT after lumpectomy [17].
 23. The 12-year incidence of invasive ipsilateral breast tumor recurrence in LCIS patients treated with lumpectomy alone is ____ % [17].
 24. Adjuvant RT following breast-conserving surgery for early breast cancer reduces the 5-year locoregional recurrence by approximately ____ % [18].
 25. Treatment of left-sided breast cancer requires special consideration of radiation dosage involving the ____ [19].
 26. Phyllodes tumors larger than 2 cm removed with ____ may benefit from postoperative RT [20].
 27. Phyllodes tumors larger than 10 ____ removed with mastectomy may benefit from postoperative RT [20].
 28. The duration of conventional fractionation treatment for breast cancer can last as long as ____ weeks [21].
 29. In patients of age > 50 with ____ margins after lumpectomy, partial breast RT is noninferior to whole-breast RT at 5-year follow-up [22].

Answers:



Answers:

1. SIXTY-SIX
2. DOUBLES
3. FORTY
4. EIGHTY-TWO
5. COMEDO
6. DISTANT
7. OVERALL
8. BREAST CANCER
9. FIFTY
10. PRONE
11. THREE
12. HALF
13. FOUR
14. RECEPTOR
15. TWENTY-ONE
16. CLINICAL
17. TWO
18. CARDIOTOXICITY
19. TEN
20. MASTECTOMY
21. SEVENTY
22. LCIS

23. FIVE
24. TWENTY
25. HEART
26. LUMPECTOMY
27. CENTIMETERS
28. SEVEN
29. NEGATIVE

Down

2. DOUBLES
6. DISTANT
11. THREE
12. HALF
13. FOUR
18. CARDIOTOXICITY
19. TEN
20. MASTECTOMY
24. TWENTY
25. HEART
26. LUMPECTOMY
27. CENTIMETERS
28. SEVEN
29. NEGATIVE

Across

1. SIXTY-SIX
3. FORTY
4. EIGHTY-TWO
5. COMEDO
7. OVERALL
8. BREAST CANCER
9. FIFTY
10. PRONE
14. RECEPTOR
15. TWENTY-ONE
16. CLINICAL
17. TWO
21. SEVENTY
22. LCIS
23. FIVE

Compliance with ethical standards

Conflict of interest No authors have any conflicts of interest.

Research involving human and/or animals participants All procedures performed were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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