

Bölüm 4

SERVİKS KANSERİNDE RADYOTERAPİ VE BRAKİTERAPİ

Aynur AYTEKİN¹

GİRİŞ

Primer Tedavi

Serviks kanserinde primer tedavi seçimi ve sonuçta ortaya çıkan genel sağkallım (GS) tanı ve evreleme sırasındaki hastalık derecesi ile ilgilidir.^{1,2}

Evre IA hastalık için, basit histerektomi veya brakiterapi (BRT) ile 5 yıllık GS % 98'in üzerindedir.² Seçilmiş hastalar için, radikal trakelektomi fertilitte koruyucu bir tedavi seçeneğidir.^{1,2,3}

Evre IA2 veya sınırlı IB1 için ise pelvik lenf nodu (LN) diseksiyonu ile birlikte radikal histerektomi tercih edilen tedavidir ve % 90 ile % 95 arasında 5 yıllık GS ile sonuçlanır.² Bununla birlikte, herhangi bir nedenle cerrahiye aday olmayan hastalar için, eşzamanlı kemoterapi (KT) ile birlikte veya yalnız radyoterapi (RT) iyi bir alternatiftir.^{1,2,3,4}

Lokal ileri serviks kanserinde (evre IB2 - IVA) eş zamanlı kemoradyoterapi (KRT) uygun primer tedavidir ve 5 yıllık GS evrelere göre değişir (IB2, IIA için % 80 ile % 95; IIB için % 70 ile % 85; III için % 40 ile % 65; IVA için % 15 ile % 25 arasında).² Eksternal RT ve BRT'nin amacı tümörü yok etmek ve kür sağlamak veya en azından uzun süreli lokal kontrol sağlamaktır. Bu nedenle, primer hedef RT volümleri, esas olarak cerrahlarınkileri taklit eder, bunun yanında, subklinik veya mikroskopik hastalığı içeren dokuları kapsayabilmesi avantajı vardır.⁵

Adjuvan Tedavi

Radikal veya modifiye radikal histerektomi sonrası orta veya yüksek riskli özellikleri olan hastalar için cisplatin bazlı eş zamanlı KRT veya yalnız RT öneril-

¹ Uzm. Dr. Sağlık Bilimleri Üniversitesi Kayseri Şehir Hastanesi Radyasyon Onkolojisi, aynuraytekin80@gmail.com

hastalıkta ilk tedavi seçeneği RT'dir. Definitif RT oldukça etkindir ancak en iyi sonuçlar eksternal RT, BRT ve eşzamanlı KT kombinasyonu ile alınmaktadır.^{1,2,5,6} Son yıllarda IMRT gibi daha konformal RT tekniklerinin kullanılması nedeniyle standart bir mesane ve bağırsak doldurma rejimi, tedavi sırasında intrapelvik organ hareketini en aza indirmeye yardımcı olabilir.⁵

Anahtar Kelimeler: Lokal ileri serviks kanseri, definitif kemoradyoterapi (KRT), adjuvan radyoterapi (RT), intrakaviter brakiterapi (BRT)

KAYNAKÇA

1. Halperin, E. C., Wazer, D. E., Perez, C. A., Brady, L. W. (2013). Perez & Brady's Principles and Practice of Radiation Oncology (Seventh edition). Philadelphia: Lippincott Williams & Wilkins
2. Gunderson, L. L., Tepper J. E. (2016). Clinical Radiation Oncology (Fourth edition). Philadelphia: Elsevier
3. NCCN clinical practice guidelines in oncology (NCCN Guidelines) Cervical Cancer Version 4.2019 (20.07.2019 tarihinde <https://www.nccn.org/professionals> adresinden ulaşılmıştır)
4. Trifiletti, D. M., Zaorsky, N. G. (2019). Absolute Clinical Radiation Oncology Review (First edition). Switzerland: Springer
5. Albuquerque, K., Beriwal S., Viswanathan A. N., Erickson B.(2019) Radiation Therapy Techniques for Gynecological Cancers (First edition). Switzerland: Springer
6. Eifel, P. J., Klopp A. H., (2017). Jinekolojik Radyasyon Onkolojisi (İsmet Şahinler , Ömer Erol Uzel, Hidayet Fazilet Öner Dinçbaş, Didem Çolpan Öksüz, Songül Çavdar Karaçam, Şefika Arzu Ergen, Çev. Ed.) İstanbul: Nobel Tıp Kitabevleri
7. Strnad, V., Pötter, R., Kovács, G. (2014) Practical Handbook of Brachytherapy (First edition). Germany: UNI-MED SCIENCE
8. Sedlis A, Bundy BN, Rotman MZ, et al. A randomized trial of pelvic radiation therapy versus no further therapy in selected patients with stage IB carcinoma of the cervix after radical hysterectomy and pelvic lymphadenectomy: a Gynecologic Oncology Group Study. Gynecol Oncol. 1999;73(2):177–83.
9. Rotman M, Sedlis A, Piedmonte MR, et al. A phase III randomized trial of postoperative pelvic irradiation in Stage IB cervical carcinoma with poor prognostic features: follow-up of a Gynecologic Oncology Group Study. Int J Radiat Oncol Biol Phys. 2006;65(1):169–76.
10. Peters WA III, Liu PY, Barrett RJ II, et al. Concurrent chemotherapy and pelvic radiation therapy compared with pelvic radiation therapy alone as adjuvant therapy after radical surgery in high-risk early-stage cancer of the cervix. J Clin Oncol.2000;18(8):1606–13.4
11. Monk BJ, Wang J, Im S, et al. Rethinking the use of radiation and chemotherapy after radical hysterectomy: a clinical-pathologic analysis of a Gynecologic Oncology Group/Southwest Oncology Group/Radiation Therapy Oncology Group trial. Gynecol Oncol. 2005;96(3):721–8.
12. Roman L, Morris M, Eifel P, et al. Reasons for inappropriate simple hysterectomy in the presence of invasive cancer of the cervix. Obstet Gynecol. 1992;79:485–489.
13. Roman LD, Morris M, Mitchell MF, et al. Prognostic factors for patients undergoing simple hysterectomy in the presence of invasive cancer of the cervix. Gynecol Oncol. 1993;50:179–184.
14. Landoni F, Maneo A, Colombo A, et al. Randomised study of radical surgery versus radiotherapy for stage Ib-IIa cervical cancer. Lancet 1997;350:535–540.
15. Eifel PJ, Winter K, Morris M, et al. Pelvic irradiation with concurrent chemotherapy versus pelvic and para-aortic irradiation for high risk cervical cancer: an update of radiation therapy oncology group trial (RTOG) 90-01. J Clin Oncol 2004;22:872–880.
16. Chemoradiotherapy for Cervical Cancer Meta-Analysis Collaboration. Reducing uncertainties about the effects of chemoradiotherapy for cervical cancer: a systematic review and meta-analysis of individual patient data from 18 randomized trials. J Clin Oncol 2008;26(35):5802–5812.

17. Jhingran A, Salehpour M, Sam M, et al. Vaginal motion and bladder and rectal volumes during pelvic intensity-modulated radiation therapy after hysterectomy. *Int J Radiat Oncol Biol Phys.* 2012;82(1):256–62.
18. Beadle BM, Jhingran A, Salehpour M, et al. Cervix regression and motion during the course of external beam chemoradiation for cervical cancer. *Int J Radiat Oncol Biol Phys.* 2009;73(1):235–41.
19. Finlay MH, Ackerman I, Tirona RG, et al. Use of CT simulation for treatment of cervical cancer to assess the adequacy of lymph node coverage of conventional pelvic fields based on bony landmarks. *Int J Radiat Oncol Biol Phys.* 2006;64(1):205–9.
20. Eminowicz G, Rompokos V, Stacey C, et al. Understanding the impact of pelvic organ motion on dose delivered to target volumes during IMRT for cervical cancer. *Radiother Oncol.* 2017;122(1):116–21.
21. Kerkhof EM, Raaymakers BW, van der Heide UA, et al. Online MRI guidance for healthy tissue sparing in patients with cervical cancer: an IMRT planning study. *Radiother Oncol.* 2008;88(2):241–9.
22. Klopp A, Yeung A, Deshmukh S, Gil K, Wenzel L, Westin S, et al. Patient-reported toxicity during pelvic intensity-modulated radiation therapy: NRG oncology-RTOG 1203. *J Clin Oncol.* 2018;36(24):2538–44.
23. Lim K, Erickson B, Jurgenliemk-Schulz IM, et al. Variability in clinical target volume delineation for intensity modulated radiation therapy in 3 challenging cervix cancer scenarios. *Pract Radiat Oncol.* 2015;5(6):e557–e65.
24. Lim K, Small W Jr, Portelance L, et al. Consensus guidelines for delineation of clinical target volume for intensity-modulated pelvic radiotherapy for the definitive treatment of cervix cancer. *Int J Radiat Oncol Biol Phys.* 2011;79(2):348–55.
25. Ma DJ, Michaletz-Lorenz M, Goddu SM, et al. Magnitude of interfractional vaginal cuff movement: implications for external irradiation. *Int J Radiat Oncol Biol Phys.* 2012;82(4):1439–44.
26. Mell LK, Kochanski JD, Roeske JC, et al. Dosimetric predictors of acute hematologic toxicity in cervical cancer patients treated with concurrent cisplatin and intensity-modulated pelvic radiotherapy. *Int J Radiat Oncol Biol Phys.* 2006;66(5):1356–65.
27. Small W Jr, Mell LK, Anderson P, et al. Consensus guidelines for delineation of clinical target volume for intensity-modulated pelvic radiotherapy in postoperative treatment of endometrial and cervical cancer. *Int J Radiat Oncol Biol Phys.* 2008;71(2):428–34.
28. Xie W-J, Wu X, Xue R-L, et al. More accurate definition of clinical target volume based on the measurement of microscopic extensions of the primary tumor toward the uterus body in international federation of gynecology and obstetrics Ib-IIa squamous cell carcinoma of the cervix. *Int J Radiat Oncol Biol Phys.* 2015;91(1):206–12.
29. Nicolet V, Carignan L, Bourdon F, Prosmann O. MR imaging of cervical carcinoma: a practical staging approach. *Radiographics.* 2000;20(6):1539–49.
30. Sanuki N, Urabe S, Matsumoto H, et al. Evaluation of microscopic tumor extension in early-stage cervical cancer: quantifying subclinical uncertainties by pathological and magnetic resonance imaging findings. *J Radiat Res.* 2013;54(4):719–26.
31. Gerbaulet A, Potter R, Haie-Meder C. Cervix cancer, in GEC ESTRO Handbook of Brachytherapy. PR Gerbaulet A, Mazon JJ et al., Editor. 2002, ESTRO Brussels. p. 301-363
32. Dimopoulos J, G Schirl, A Baldinger, et al. MRI Assessment of Cervical Cancer for Adaptive Radiotherapy. *Strahlentherapie Onkologie*, 2009.
33. Eifel PJ, Jhingran A, Brown C, et al. Time course and outcome of central recurrence after radiation therapy for carcinoma of the cervix. *Int J Gynecol Cancer* 2006;16(3): 1106-11.
34. Thomas G. Improved treatment for cervical cancer - Concurrent chemotherapy and radiotherapy. *N Engl J Med* 1999;340:1198-2000.
35. Green JA, Tierney JF et al. Survival and recurrence after concomitant chemotherapy and radiotherapy for cancer of the uterine cervix: a systematic review and meta-analysis. *Lancet* 2001;358: 781-6.

36. Dimopoulos JC, Schard G, Berger D, et al. Systematic evaluation of MRI findings in different stages of treatment of cervical cancer: potential of MRI on delineation of target, pathoanatomic structures, and organs at risk. *Int J Radiat Oncol Biol Phys* 2006;64(5):1380-8.
37. Dimopoulos JC, Kirisits C, Petric P, et al. The Vienna applicator for combined intracavitary and interstitial brachytherapy of cervical cancer: clinical feasibility and preliminary results. *Int J Radiat Oncol Biol Phys* 2006; 66(1):83-90.
38. Prescribing, recording, and reporting brachytherapy for cancer of the cervix. *J ICRU*.2013;13(1-2):NP. <https://doi.org/10.1093/jicru/ndw027>.
39. Kirisits C, Potter R, Lang S, et al. Dose and volume parameters for MRI-based treatment planning in intracavitary brachytherapy for cervical cancer. *Int J Radiat Oncol Biol Phys* 2005;62(3):901-11.
40. Perez CA, Lockett MA et al. Impact of dose in outcome of irradiation alone in carcinoma of the uterine cervix: analysis of two different methods. *Int J Radiat Oncol Biol Phys* 1991;21:885-98.
41. Potter R, Kirisits C, Fidarova EP et al. Present status and future of high-precision image guided adaptive brachytherapy for cervix carcinoma. *Acta Oncol* 2008; 47(7):1325-36.
42. Hughes-Davies L, Silver B, Kapp D. Parametrial interstitial brachytherapy for advanced or recurrent pelvic malignancy: the Harvard/Stanford experience. *Gynecol Oncol.* 1995;58:24-27.
43. Monk BJ, Tewari K, Burger RA, et al. A comparison of intracavitary versus interstitial irradiation in the treatment of cervical cancer. *Gynecol Oncol.* 1997;67:241-247.