

## JİNEKOLOJİK KANSERLERDE RADYOTERAPİ

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### GİRİŞ

Jinekolojik maligniteler kadınlarda sık görülen kanserlerdir ve önemli oranda ölüme sonuçlanırlar. Ülkeler arasında farklılıklar olsa da en sık etkilenen bölge serviks, ardından over ve uterin korpusudur (1) Radyoterapi, jinekolojik malignitelerde, tedavinin sağlanmasında çok önemli bir bileşendir. Serviks kanserli kadınların %80-90'ında, endometriyal kanserli kadınların %60'ında ve vulva karsinomlu kadınların %50'sinin tedavi yönetiminde radyoterapi gerekmektedir (2).

Jinekolojik kanserler için radyoterapi, external ışın tedavisi (external beam radiotherapy = EBRT) ve intrakaviter veya interstisyel brakiterapi kullanılarak verilebilir (3). Bunların bir kombinasyonu şeklinde de uygulanmaktadır. Radyoterapi ameliyattan önce neoadjuvan olarak veya ameliyattan sonra adjuvan olarak ana tedavi modalitesi ile birleştirilebilir. Beraberinde eşzamanlı kemoterapi ile kombinasyon veya kemoterapi sonrası sıralı şekilde radyoterapi kullanılabilir.

Radyoterapi uygulamaları konvansiyonel veya üç boyutlu konformal radyoterapi (3D-CRT) den ziyade şimdilerde daha az yan etki ve

daha iyi homojen doz dağılımı sağlayan yoğunluk ayarlı radyoterapi (intensity modulated radiation therapy = IMRT) ve Hacimsel yoğunluk ayarlı ark tedavisi ( volumetrik modulated arc therapy = VMAT) gibi ileri teknolojik teknikler günümüzde daha sıklıkla kullanılmaktadır. Ayrıca tedavi planlamasında Manyetik Rezonans Görüntüleme veya Pozitron-Emisyon-Tomografisi (PET) ile radyoterapi planlama tomografisinin füzyon kullanımı ile yapılan planlama yöntemleri ile çok daha hassas radyoterapi planları oluşturulmaktadır. Hasta üzerinde uygulamalarda da görüntü kılavuzlu radyoterapi (IGRT) olarak adlandırılan tümörü ve hastayı takip ederek radyoterapi uygulanmaktadır. Böylece hedef tümör volümü en iyi şekilde tedavi edilirken tümör çevresindeki normal doku dozları en aza indirilebilmektedir (4).

Jinekolojik kanserler; serviks, endometriyal, uterin, over, vajinal, vulvar, gestasyonel trofoblastik hastalıklar ve koryokarsinomu içerir. Bu yazıda spesifik anatomik tümör bölgelerine göre radyoterapinin yer aldığı kanserlerde radyoterapinin tedavideki yeri vurgulanmıştır.

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Radyasyon onkolojisindeki teknolojik ve bilimsel gelişmeler ile IMRT, VMAT IGRT ve hasta IGRT-brakiterapi opsiyonları ile ışınlanmanın hassasiyetle yapılmasını sağlamaktadır. Böylece teknolojinin tedavi ile birleşmesi ile gelecekte, tedavi etkinliğinin daha da artırabilecek önemli bir ilgi alanı bulunmaktadır.

## KAYNAKLAR

1. Brinton LA, Hoover R. Epidemiology of gynecologic cancers. Principles and Practices of Gynecologic Oncology: Lippincott, Philadelphia; 1992. p. 3-26.
2. Dasari P, Vivekanandam S, Raghava KSA. Radiation for Gynaecological Malignancies. Radiotherapy. 2017;63-88.
3. Reed NS, Sadozye AH. Update on radiotherapy in gynaecological malignancies. The Obstetrician Gynaecologist. 2017;19(1):29-36.
4. Small Jr W, Mell LK, Anderson P, Creutzberg C, De Los Santos J, Gaffney D, et al. Consensus guidelines for delineation of clinical target volume for intensity-modulated pelvic radiotherapy in postoperative treatment of endometrial and cervical cancer. International Journal of Radiation Oncology Biology Physics. 2008;71(2):428-34.
5. Portelance L, Chao KC, Grigsby PW, Bennet H, Low D. Intensity-modulated radiation therapy (IMRT) reduces small bowel, rectum, and bladder doses in patients with cervical cancer receiving pelvic and para-aortic irradiation. International Journal of Radiation Oncology Biology Physics. 2001;51(1):261-6.
6. Laliscia C, Fabrini MG, Delishaj D, Coraggio G, Morganti R, Tana R, et al. Concomitant external-beam irradiation and chemotherapy followed by high-dose rate brachytherapy boost in the treatment of squamous cell carcinoma of the vagina: a single-center retrospective study. Anticancer Research. 2016;36(4):1885-9.
7. Görkem A. Serviks ve Endometrium Kanserinde Brakiterapi. Turk J Oncol 2017;32(Supp 1):34-45.
8. Otto K. Volumetric modulated arc therapy: IMRT in a single gantry arc. Medical physics. 2008;35(1):310-7.
9. Hall EJ, Wu C-S. Radiation-induced second cancers: the impact of 3D-CRT and IMRT. International Journal of Radiation Oncology Biology Physics. 2003;56(1):83-8.
10. Hall EJ, Wu C-S. The impact of IMRT on the incidence of radiation-induced second cancers. Center For Radiological Research• Annual Report 2002. 2003:65.
11. Radiology ACo. ACR-ASTRO Practice Guideline for Image-Guided Radiation Therapy (IGRT). 2010.
12. Rambout L, Hopkins L, Hutton B, Fergusson D. Prophylactic vaccination against human papillomavirus infection and disease in women: a systematic review of randomized controlled trials. Cmaj. 2007;177(5):469-79.
13. Al-Kalbani M, McVeigh G, Nagar H, McCluggage WG. Do FIGO Stage IA and Small ( $\leq 2$  cm) IB1 Cervical Adenocarcinomas Have a Good Prognosis and Warrant Less Radical Surgery? International Journal of Gynecologic Cancer. 2012;22(2).
14. Webb JC, Key CR, Qualls CR, Smith HO. Population-based study of microinvasive adenocarcinoma of the uterine cervix. Obstetrics & Gynecology. 2001;97(5):701-6.
15. Miroshnichenko GG, Parva M, Holtz DO, Klemens JA, Dunton CJ. Interpretability of excisional biopsies of the cervix: cone biopsy and loop excision. Journal of Lower Genital Tract Disease. 2009;13(1):10-2.
16. Kim M-K, Kim MA, Kim JW, Chung HH, Park N-H, Song Y-S, et al. Loop electrosurgical excision procedure findings for identification of patients with early-stage cervical cancer suitable for less radical surgery. International Journal of Gynecologic Cancer. 2012;22(7):1214-9.
17. AN. V. Clinical Radiation Oncology. 5 th ed. Philadelphia: Elsevier Health Sciences; 2015.
18. Green JA, Kirwan JJ, Tierney J, Vale CL, Symonds PR, Fresco LL, et al. Concomitant chemotherapy and radiation therapy for cancer of the uterine cervix. Cochrane database of systematic reviews. 2005(3).
19. Chiantera V, Rossi M, De Iaco P, Koehler C, Marnitz S, Fagotti A, et al. Morbidity after pelvic exenteration for gynecological malignancies: a retrospective multicentric study of 230 patients. International Journal of Gynecologic Cancer. 2014;24(1).
20. Bouchard-Fortier G, Reade CJ, Covens A. Non-radical surgery for small early-stage cervical cancer. Is it time? Gynecologic oncology. 2014;132(3):624-7.
21. Dargent D, Martin X, Sacchetoni A, Mathevet P. Laparoscopic vaginal radical trachelectomy: a treatment to preserve the fertility of cervical carcinoma patients. Cancer: Interdisciplinary International Journal of the American Cancer Society. 2000;88(8):1877-82.
22. Obstetricians ACo, Gynecologists. ACOG practice bulletin. Diagnosis and treatment of cervical carcinomas. Number 35, May 2002. American College of Obstetricians and Gynecologists. International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics. 2002;78(1):79.
23. Koh W-J, Abu-Rustum NR, Bean S, Bradley K, Campos SM, Cho KR, et al. Cervical cancer, version 3.2019, NCCN clinical practice guidelines in oncology. Journal of the National Comprehensive Cancer Network. 2019;17(1):64-84.
24. Morice P, Juncker L, Rey A, El-Hassan J, Haie-Meder C, Castaigne D. Ovarian transposition for patients with cervical carcinoma treated by radiosurgical combination. Fertility and sterility. 2000;74(4):743-8.
25. Colombo N, Creutzberg C, Amant F, Bosse T, González-Martín A, Ledermann J, et al. ESMO-ESGO-ESTRO consensus conference on endometrial cancer: diagnosis, treatment and follow-up. International Journal of Gynecologic Cancer. 2016;26(1).
26. Basaran D, Salman MC, Yuce K. Endometrium Kanseri: Seröz ve Berrak Hücreli Histolojilerin Yönetimi.



- Türkiye Klinikleri Jinekoloji Obstetrik-Özel Konular. 2014;7(3):75-83.
27. Creasman W, Odicino F, Maisonneuve P, Quinn M, Beller U, Benedet J, et al. Carcinoma of the corpus uteri. *International Journal of Gynecology & Obstetrics*. 2006;95:S105-S43.
  28. Colombo N, Preti E, Landoni F, Carinelli S, Colombo A, Marini C, et al. Endometrial cancer: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. *Annals of oncology*. 2013;24(suppl\_6):vi33-vi8.
  29. Parkin DM, Bray F, Ferlay J, Pisani P. Global cancer statistics, 2002. *CA: a cancer journal for clinicians*. 2005;55(2):74-108.
  30. Beller U, Benedet J, Creasman W, Ngan H, Quinn M, Maisonneuve P, et al. Carcinoma of the vagina. *International Journal of Gynecology & Obstetrics*. 2006;95:S29-S42.
  31. Guerri S, Perrone AM, Buwenge M, Ferioli M, Macchia G, Tagliaferri L, et al. Definitive radiotherapy in invasive vaginal carcinoma: a systematic review. *The oncologist*. 2019;24(1):132.
  32. Chang JH, Jang WI, Kim YB, Kim JH, Kim YS, Kim YS, et al. Definitive treatment of primary vaginal cancer with radiotherapy: multi-institutional retrospective study of the Korean Radiation Oncology Group (KROG 12-09). *Journal of gynecologic oncology*. 2015;27(2).
  33. Jain V, Sekhon R, Giri S, Bora RR, Batra K, Bajracharya A, et al. Role of Radical Surgery in Early Stages of Vaginal Cancer—Our Experience. *International Journal of Gynecologic Cancer*. 2016;26(6).
  34. Frank SJ, Jhingran A, Levenback C, Eifel PJ. Definitive radiation therapy for squamous cell carcinoma of the vagina. *International Journal of Radiation Oncology\* Biology\* Physics*. 2005;62(1):138-47.
  35. Homesley HD, Bundy BN, Sedlis A, Adcock L. Radiation therapy versus pelvic node resection for carcinoma of the vulva with positive groin nodes. *Obstetrics and gynecology*. 1986;68(6):733-40.
  36. Di Donato V, Bellati F, Fischetti M, Plotti F, Perniola G, Panici PB. Vaginal cancer. *Critical reviews in oncology/hematology*. 2012;81(3):286-95.
  37. Greenwalt JC, Amdur RJ, Morris CG, Morgan LS, Castagno J, Markham MJ, et al. Outcomes of definitive radiation therapy for primary vaginal carcinoma. *American journal of clinical oncology*. 2015;38(6):583-7.
  38. L. JE. *Vulvar Cancer Treatment Protocols*. MedScape. 2017. *Drugs Diseases > Oncology*2017.
  39. McCann GA, Cohn DE, Jewell EL, Havrilesky LJ. Lymphatic mapping and sentinel lymph node dissection compared to complete lymphadenectomy in the management of early-stage vulvar cancer: a cost-utility analysis. *Gynecologic oncology*. 2015;136(2):300-4.
  40. Faul CM, Mirmow D, Huang Q, Gerszten K, Day R, Jones MW. Adjuvant radiation for vulvar carcinoma: improved local control. *International Journal of Radiation Oncology Biology Physics*. 1997;38(2):381-9.
  41. Shylasree T, Bryant A, Howells RE. Chemoradiation for advanced primary vulvar cancer. *Cochrane Database of Systematic Reviews*. 2011(4).
  42. Moore DH, Thomas GM, Montana GS, Saxer A, Gallup DG, Olt G. Preoperative chemoradiation for advanced vulvar cancer: a phase II study of the Gynecologic Oncology Group. *International Journal of Radiation Oncology Biology Physics*. 1998;42(1):79-85.
  43. Kunos C, Simpkins F, Gibbons H, Tian C, Homesley H. Radiation therapy compared with pelvic node resection for node-positive vulvar cancer: a randomized controlled trial. *Obstetrics & Gynecology*. 2009;114(3):537-46.
  44. Sciacero P, Cante D, Piva C, Casanova Borca V, Petrucci E, Gastaldi L, et al. The role of radiation therapy in vulvar cancer: review of the current literature. *Tumori Journal*. 2017;103(5):422-9.