

# GEBELİKTE AKCİĞER KANSERİNE ÖZGÜ YAKLAŞIMLAR

## 32. BÖLÜM

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### AKCİĞER KANSERİ

Akciğer kanseri genetik ve epigenetik birçok aşamadan oluşan nihayetinde normal akciğer epitelinin kontrolsüz çoğalması ile sonuçlanan bir hastalıktır(1). Akciğer kanserlerinin yaklaşık %95'ini küçük hücreli dışı akciğer kanseri (KH-DAK) ve küçük hücreli akciğer kanseri (KHAK) oluşturur. Geri kalan %5'i bu iki alt grup dışındaki diğer hücre tiplerini içerir. Histopatolojik olarak bu ayrımın yapılması tedavi, prognoz ve evreleme için önemlidir(2).

#### İnsidans ve Epidemiyoloji

Gebelikte kanser görülme sıklığı %0.07 ile %0.1 arasında veya 1000 gebelikte yaklaşık bir olarak görülmektedir. Bununla birlikte, modern toplumlarda bir kadının hayatının üçüncü veya dördüncü on yılında gebeliği geçiktirme eğiliminde olması muhtemelen yakın gelecekte gebeliğe bağlı malign tümörlerin daha fazla vakasını tespit etmeyi bekliyoruz(3). Gebelikle ilişkili en yaygın maligniteler; meme, malign melanom, lenfoma, lösemi, serviks, kolon, yumurtalık kanserini içerir(4). Akciğer kanseri hem insidans hem de ölüm oranı açısından en yaygın kanser türlerinden biridir. Akciğer kanseri altıncı ya da yedinci dekadadaki hastalarda erkek üstünlüğüyle daha sık gelişmesine rağmen, son zamanlarda özellikle kadınlarda 40 yaşın altındaki kişilerde görülme sıklığı artmıştır(5). Genel olarak, akciğer kanseri olan hastaların sadece %1-6'sı 40 yaşın altındayken, kadın hastaların oranı yaklaşık %24-46'dır(6). Akciğer kanseri genel olarak kadınlarda en sık görülen ikinci kanser türüdür, ancak literatürde bildirilen sadece 68 vaka ile gebelik sırasında nadir görülen bir kanserdir(6). Akciğer kanserli gebelerin ortanca yaşı 36 ve tanı anında ortalama gebelik yaşı 29 haftadır. Bildirilen gebelikte tüm akciğer kanseri vakaları ikinci ve üçüncü trimesterde teşhis edilmiştir(6).

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malı ve gerekirse erken tanı için biyopsi yapılmalıdır. Akciğer kanseri olan gebelikler yüksek risk taşır. Platin bazlı kombinasyon kemoterapisi gebeliğin ikinci trimesterinde güvenlidir. İntrauterin büyüme ve gelişmeyi izlemek için düzenli ultrason muayenesi yapılmalı ve doğumdan sonra uzun süreli takip yapılmalıdır.

## KAYNAKLAR

1. Wistuba, II, Gazdar AF. Lung cancer preneoplasia. *Annu Rev Pathol.* 2006;1:331-48.
2. Midthun DE (Author), Lilenbaum RC (Section editor), Vora SR (Deputy editor). Overview of the risk factors, pathology and clinical manifestations of lung cancer. [Internet]. Wolters Kluwer; 2019. Available from: [https://www.uptodate.com/contents/overview-of-the-risk-factors-pathology-and-clinical-manifestations-of-lung-cancer?search=lung%20cancer&source=search\\_result&selectedTitle=1~150&usage\\_type=default&display\\_rank=1](https://www.uptodate.com/contents/overview-of-the-risk-factors-pathology-and-clinical-manifestations-of-lung-cancer?search=lung%20cancer&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1) (registration needed).
3. Pavlidis N. Coexistence of pregnancy and malignancy. *Oncologist* 2002;7:279—87.
4. Oduncu FS, Kimmig R, Hepp H, Emmerich B. Cancer in pregnancy: maternal-fetal conflict. *J Cancer Res Clin Oncol* 2003;129:133—46.
5. Penha DS, Salge AK, Tironi F, Salvanha JC, Castro EC, Teixeira Vde P, et al. Bronchogenic, carcinoma, of squamous cells in a young pregnant woman. *Ann Diagn Pathol* 2006;10:253—8.
6. Pavlidis N. Lung cancer during pregnancy: an emerging issue. *Lung Cancer.* 2008;59(3):279—281.
7. Alberg, A.J., et al., Epidemiology of lung cancer: Diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines. Chest, 2013. 143(5 Suppl): p. e1S-e29S.
8. Pentheroudakis G, Pavlidis N. Gastrointestinal, urologic and lung malignancies during pregnancy. In: Recent results in cancer research, vol 178, no. 13. Berlin Heidelberg: Springer-Verlag; 2007. pp. 139—166.
9. Hayama M, Chida M, Tamura M, Kobayashi S, Oyaizu T, Honma K. Unexpected rapid growth of estrogen receptor positive lung cancer during pregnancy. *Ann Thorac Cardiovasc Surg.* 2014;20:325—8.
10. Chlebowski RT, Schwartz AG, Wakelee H, et al. Oestrogen plus progestin and lung cancer in post-menopausal women (Women's Health Initiative trial): a post-hoc analysis of a randomised controlled trial. *The Lancet.* 2009;374:1243—51.
11. Nose N, Sugio K, Oyama T, et al. Association between estrogen receptor-beta expression and epidermal growth factor receptor mutation in the postoperative prognosis of adenocarcinoma of the lung. *J Clin Oncol.* 2009;27:411—7.
12. Kılınç G. Akciğer Kanseriinde Klinik Tanı. 2007;125—8.
13. Ceauşu M, Hostiu S, Sajin M, et al. Gestational lung adenocarcinoma: case report. *Int J Surg Pathol* 2014;22:663-6.
14. Surbone A, Peccatori F, Pavlidis N. Cancer and pregnancy. In: Recent results incancer research. Berlin: Springer; 2008.
15. Pentheroudakis G, Pavlidis N. Gastrointestinal, urologic and lung malignancies during pregnancy. *Recent Results Cancer Res* 2008;178:137—64.
16. Mitrou S, Petrakis D, Fotopoulos G, et al. Lung cancer during pregnancy: A narrative review. *J Adv Res* 2016;7:571-4.
17. Boussios S, Han SN, Fruscio R, et al. Lung cancer in pregnancy: report of nine cases from an international collaborative study. *Lung Cancer* 2013;82:499-505.
18. Jackisch C, Louwen F, Schwenkhagen A, Karbowski B, Schmid KW, Schneider HP, et al. Lung cancer during pregnancy involving the products of conception and a review of the literature. *Arch Gynecol Obstet* 2003;268(2):69—77.

19. Azim HA, Peccatori FA, Pavlidis N. Lung cancer in the pregnant woman: to treat or not to treat, that is the question. *Lung Cancer* 2010;67:251–6.
20. Baysinger CL. Imaging during pregnancy. *Anesth Analg* 2010;110:863–7.
21. Patel SJ, Reede DL, Katz DS, Subramaniam R, Amorosa JK. Imaging the pregnant patient for nonobstetric conditions: algorithms and radiation dose considerations. *Radiographics* 2007;27:1705–22.
22. mdanderson.org. Internet. The University of Texas M D Anderson Cancer Center. 2017; [cited 2017 Apr 25]. Available from: <https://www.mdanderson.org/documents/for-physicians/algorithms/cancer-treatment/catreatment-non-small-cell-web-algorithm.pdf> [14] Pavlidis NA. Coexistence of pregnancy an.
23. Sarimam N, Levent E, Yener NA, et al. Lung cancer and pregnancy. *Lung Cancer* 2013;79:321–3.
24. Pentheroudakis G, Orrechia R, Hoekstra HJ, Pavlidis N. Cancer, fertility and pregnancy: ESMO clinical practice guidelines for diagnosis, treatment and follow-up. *Ann Oncol* 2010;21(Suppl. 5):v266–73.
25. Yener NA, Midi A, Cubuk R, Orki A, Onar C, Ersev A, Arman B. Palpable lesions as a diagnostic tool in patients with thoracic pathology. *Diagn Cytopathol* 2011;16, <http://dx.doi.org/10.1002/dc.21755> [Epub ahead of print].
26. Pentheroudakis G, Pavlidis N. Cancer and pregnancy: poena magna, not anymore. *Eur J Cancer* 2006;42:126–40.
27. Meirow D, Schiff E. Appraisal of chemotherapy effects on reproductive outcome according to animal studies and clinical data. *J Natl Cancer Inst Monogr* 2005:21—5.
28. Pavlidis N. Coexistence of pregnancy and malignancy. *Oncologist*. 2002;7(4):279–287.
29. Kim JW, Kim JS, Cho JY, et al. Successful video-assisted thoracoscopic lobectomy in a pregnant woman with lung cancer. *Lung Cancer* 2014;85:331–4.
30. Cardonick E, Iacobucci A. Use of chemotherapy during human pregnancy. *Lancet Oncol* 2004;5:283—91.
31. Leslie K, Koil C, Rayburn W. Chemotherapy drugs in pregnancy. *Obstet Gynecol Clin N Am* 2005;32:627—40.
32. Peccatori FA, Azim HA, Orecchia R, et al. Cancer, pregnancy and fertility: ESMO clinical practice guidelines for diagnosis, treatment and follow-up. *Ann Oncol*. 2013;24(suppl 6):vi160–vi170.
33. Cardonick E, Iacobucci A, Doll R, et al. Use of chemotherapy during human pregnancy. *Lancet Oncol*. 2004;5:283–291.
34. Karam A, Feldman N, Holschneider CH, Neoadjuvant cisplatin and radikal cesarean hysterectomy for cervical cancer in pregnancy. *Nat Clin Pract Oncol* 2007;4(6):375–80.
35. Mir O, Berveiller P, Ropert S, Goffinet F, Goldwasser F. Use of platinum derivatives during pregnancy. *Cancer*. 2008;113(11):3069–74.
36. Jänne PA, Rodriquez-Thompson D, Metcalf DR, Swanson SJ, Greisman HA, Wilkins-Haug L, Johnson BE. Chemotherapy for a patient with advanced non-small-cell lung cancer during pregnancy: a case report and a review of chemotherapy treatment during pregnancy. *Oncology*. 2001;61(3):175–83.
37. Kim JH, Kim HS, Sung CW, Kim KH, Kim CH, Lee KY. Docetaxel, gemcitabine and cisplatin administered for non-small cell lung cancer during the first and second trimester of an unrecognized pregnancy. *Lung Cancer*. 2008;59(2):270–3.
38. Dekrem J, Van Calsteren K, Amant F. Effects of fetal exposure to maternal chemotherapy. *Paediatr Drugs*. 2013;15(5):329–34.
39. Gurumurthy M, Koh P, Singh R, Bhide A, Satodia P, Hocking M, Anbarasu A, Wood LE. Metastatic non-small-cell lung cancer and the use of gemcitabine during pregnancy. *J Perinatol*. 2009;29(1):63–5.
40. Carcía-González J, Cueva J, Lamas MJ, Curiel T, Krana B, López-López R. Paclitaxel and cisplatin in the treatment of metastatic non-small-cell lung cancer during pregnancy. *Clin Transl Oncol*. 2008;10(6):375–6.

41. Kluetz PG, Edelman MJ. Successful treatment of small cell lung cancer during pregnancy. *Lung Cancer*. 2008;61(1):129–30.
42. Mir O, Berveiller P, Goffinet F, et al. Taxanes for breast cancer during pregnancy: a systematic review. *Ann Oncol* 2010;21:425–6.
43. Jänne PA, Rodriguez-Thompson D, Metcalf DR, et al. Chemotherapy for a patient with advanced non-small cell lung cancer during pregnancy: a case report and a review of chemotherapy treatment during pregnancy. *Oncology* 2001;61:175–83.
44. Saha A, Rudd R. Gemcitabine and carboplatin: is this the best combination for non-small cell lung cancer. *Expert Rev Anticancer Ther* 2006;6:165–73.
45. Rothschild SI. Lung Cancer in Pregnancy-A Forgotten Disease Entity. *J Thorac Oncol* 2016;11:1376–8.
46. Azim HA Jr, Scarfone G, Peccatori FA. Carboplatin and weekly paclitaxel for the treatment of advanced non-small cell lung cancer (NSCLC) during pregnancy. *J Thorac Oncol* 2009;4:559–60.
47. Yates R, Zhang J. Lung Cancer in Pregnancy: An Unusual Case of Complete Response to Chemotherapy. *Cureus* 2015;7:e440.
48. Orecchia R, Lucignani G, Tosi G. Prenatal irradiation and pregnancy: the effects of diagnostic imaging and radiation therapy. *Recent Results Cancer Res* 2008;178:3–20.
49. Doll R, Wakeford R. Risk of childhood cancer from fetal irradiation. *Br J Radiol* 1997;70:130–9.
50. F. Amant, T. Vandebruc (INCIP) ke, M. Verheeecke, et al International Network on Cancer, Infertility, and Pregnancy (INCIP). Pediatric Outcome after Maternal Cancer Diagnosed during Pregnancy. *N Engl J Med* 2015; 373(19):1824–34.
51. Pereg D, Koren G, Lishner M. Cancer in pregnancy: gaps, challenges and solutions. *Cancer Treat Rev*. 2008;34(4):302–12.
52. Patyna S, Haznedar J, Morris D, Freshwater K, Peng G, Sukbuntherng J, et al. Evaluation of the safety and pharmacokinetics of the multi-targeted receptor tyrosine kinase inhibitor sunitinib during embryo-fetal development in rats and rabbits. *Birth Defects Res B Dev Reprod Toxicol* 2009;86(June (3)):204–13.
53. Wada Y, Ozaki H, Abe N, Nagamitsu T, Ohta H, Nakahara T, et al. Effects of KRN633, an inhibitor of vascular endothelial growth factor receptor-2 tyrosine kinase, on vascular development of placenta and fetus of mid-pregnancy in mice. *J Pharmacol Sci* 2010;112(3):290–8.
54. Neves I, Mota PC, Hespagnol VP. Lung cancer during pregnancy: an unusual case. *Rev Port Pneumol* 2014;20(1):46–9.
55. Gil S, Goetgheluck J, Paci A, Broutin S, Friard S, Couderc LJ, et al. Efficacy and safety of gefitinib during pregnancy: case report and literature review. *Lung Cancer* 2014;85:481–4.
56. Kerjouan M, Jouneau S, Corre R, et al. Diagnosis and management of lung cancer during pregnancy. *Rev Mal Respir*. 2013;30(2):125–136.
57. Minsker DH, Manson JM, Peter CP. Effects of the bisphosphonate, alendronate, parturition in the rat. *Toxicol Appl Pharmacol* 1993;121(2):217–23.
58. Djokanovic N, Klieger-Grossmann C, Koren G. Does treatment with bisphosphonates endanger the human pregnancy? *J Obstet Gynaecol Can* 2008;30(12): 1146–8.
59. Voulgaris E, Pentheroudakis G, Pavlidis N. Cancer and pregnancy: a comprehensive review. *Surg Oncol* 2011;20(4): e175–85.
60. Amant F, Han SN, Gziri MM, Dekrem J, Van Calsteren K. Chemotherapy during pregnancy. *Curr Opin Oncol*. 2012;24:580–586.
61. Zemlickis D, Lishner M, Degendorfer P, Panzarella T, Sutcliffe SB, Koren G. Fetal outcome after in utero exposure to cancer chemotherapy. *Arch Intern Med* 1992;152:573–6.
62. Tabata T, Nishiura K, Tanida K, Kondo E, Okugawa T, Sagawa N. Carboplatin chemotherapy in a pregnant patient with undifferentiated ovarian carcinoma: case report and review of the literature. *Int J Gynecol Cancer* 2008;18:181–4.
63. Robova H, Rob L, Hrehorcak M, Zoban P, Prusa R. Endodermal sinus tumor diagnosed in pregnancy: a case report. *Int J Gynecol Cancer* 2007;17:914–6.
64. Zemlickis D, Klein J, Moselhy G, Koren G. Cisplatin protein binding in pregnancy and the neonatal period. *Med Pediatr Oncol* 1994;23:476–9.