## Understanding HER2-Positive Breast Cancer (BC)

| Resource | Address |
|---|---|
| **Baselga J, Coleman RE, Cortés J, Janni W. Advances in the management of HER2-positive early breast cancer. *Crit Rev Oncol Hematol*. 2017;119:113-122.** | https://www.sciencedirect.com/science/article/abs/pii/S1040842817303517 |
| **Burstein HJ. The distinctive nature of HER2-positive breast cancers. *N Engl J Med.* 2005;353:1652-1654.** | https://www.nejm.org/doi/full/10.1056/NEJMp058197 |
| **Ross JS, Slodkowska EA, Symmans WF, Pusztai L, Ravdin PM, Hortobagyi GN. The HER-2 receptor and breast cancer: Ten years of targeted anti-HER-2 therapy and personalized medicine. *Oncologist*. 2009;14:320-368.** | https://academic.oup.com/oncolo/article/14/4/320/6397834 |
| **Slamon DJ, Clark GM, Wong SG, Levin WJ, Ullrich A, McGuire WL. Human breast cancer: Correlation of relapse and survival with amplification of the HER-2/*neu* oncogene. *Science.* 1987;235:177-182.** | https://www.science.org/doi/10.1126/science.3798106 |
| **Slamon DJ, Leyland-Jones B, Shak S, et al. Use of chemotherapy plus a monoclonal antibody against HER2 for metastatic breast cancer that overexpresses HER2. *N Engl J Med.* 2001;344:783-792.** | https://www.nejm.org/doi/full/10.1056/NEJM200103153441101 |

## Targeted Therapy in HER2-positive Metastatic BC (mBC)

| Resource | Address |
|---|---|
| **Baselga J, Cortés J, Kim SB, et al. Pertuzumab plus trastuzumab plus docetaxel for metastatic breast cancer. *N Engl J Med.* 2012;366:109-119.** | https://www.nejm.org/doi/full/10.1056/NEJMoa1113216 |
| **Bourdeanu L, Luu T. Nursing perspectives on trastuzumab emtansine for the treatment of metastatic breast cancer. *Clin J Oncol Nurs.* 2013;17:E58-E62.** | https://www.ons.org/cjon/17/5/nursing-perspectives-trastuzumab-emtansine-treatment-metastatic-breast-cancer |
| **Curigliano G, Mueller V, Borges V, et al. Tucatinib versus placebo added to trastuzumab and capecitabine for patients with pretreated HER2+ metastatic breast cancer with and without brain metastases (HER2CLIMB): Final overall survival analysis. *Ann Oncol.* 2022;33:321-329.** | https://www.annalsofoncology.org/article/S0923-7534(21)04879-1/fulltext |
| **Dent SF, Morse A, Burnette S, Guha A, Moore H. Cardiovascular toxicity of novel HER2-targeted therapies in the treatment of breast cancer. *Curr Oncol Rep*. 2021;23:128.** | https://link.springer.com/article/10.1007/s11912-021-01114-x |
| **Geyer C, Forster J, Lindquist D, et al. Lapatinib plus capecitabine for HER2-positive advanced breast cancer. *N Engl J Med*. 2006;355:2733-2743.** | https://www.nejm.org/doi/full/10.1056/NEJMoa064320 |
| **Grinda T, Antoine A, Jacot W, et al. Evolution of overall survival and receipt of new therapies by subtype among 20 446 metastatic breast cancer patients in the 2008-2017 ESME cohort. E*SMO Open*. 2021;6:100114.** | https://www.esmoopen.com/article/S2059-7029(21)00072-7/fulltext |

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|---|---|
| **Krop IE, Kim SB, Martin AG, et al. Trastuzumab emtansine versus treatment of physician's choice in patients with previously treated HER2-positive metastatic breast cancer (TH3RESA): Final overall survival results from a randomised open-label phase 3 trial. *Lancet Oncol.* 2017;18:743-754.** | https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(17)30313-3/fulltext |
| **Lewis Phillips GD, Li G, Dugger DL, et al. Targeting HER2-positive breast cancer with trastuzumab-DM1, an antibody-cytotoxic drug conjugate. *Cancer Res*. 2008;68:9280-9290.** | https://aacrjournals.org/cancerres/article/68/22/9280/542757/Targeting-HER2-Positive-Breast-Cancer-with |
| **LoRusso PM, Weiss D, Guardino E, Girish S, Sliwkowski MX. Trastuzumab emtansine: A unique antibody-drug conjugate in development for human epidermal growth factor receptor 2-positive cancer. *Clin Cancer Res.* 2011;17:6437-6447.** | https://aacrjournals.org/clincancerres/article/17/20/6437/76533/Trastuzumab-Emtansine-A-Unique-Antibody-Drug |
| **Modi S, Saura C, Yamashita T, et al. Trastuzumab deruxtecan in previously treated HER2-positive breast cancer. *N Engl J Med.* 2020;382:610-621.** | https://www.nejm.org/doi/10.1056/NEJMoa1914510 |
| **Murthy R, Borges VF, Conlin A, et al. Tucatinib with capecitabine and trastuzumab in advanced HER2-positive metastatic breast cancer with and without brain metastases: A non-randomised, open-label, phase 1b study. *Lancet Oncol*. 2018;19:880-888.** | https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(18)30256-0/fulltext |
| **Murthy RK, Loi S, Okines A, et al. Tucatinib, trastuzumab, and capecitabine for HER2-positive metastatic breast cancer. *N Engl J Med*. 2019;382:597-609.** | https://www.nejm.org/doi/10.1056/NEJMoa1914609 |
| **Nakada T, Sugihara K, Jikoh T, Abe Y, Agatsuma T. The latest research and development into the antibody-drug conjugate, [fam-] trastuzumab deruxtecan (DS-8201a), for HER2 cancer therapy. *Chem Pharm Bull (Tokyo)*. 2019;67:173-185.** | https://www.jstage.jst.go.jp/article/cpb/67/3/67_c18-00744/_article |
| **Ogitani Y, Aida T, Hagihara K, et al. DS-8201a, A novel HER2-targeting ADC with a novel DNA topoisomerase I inhibitor, demonstrates a promising antitumor efficacy with differentiation from T-DM1. *Clin Cancer Res*. 2016;22:5097-5108.** | https://aacrjournals.org/clincancerres/article/22/20/5097/124857/DS-8201a-A-Novel-HER2-Targeting-ADC-with-a-Novel |
| **Ogitani Y, Hagihara K, Oitate M, Naito H, Agatsuma T. Bystander killing effect of DS-8201a, a novel anti-human epidermal growth factor receptor 2 antibody-drug conjugate, in tumors with human epidermal growth factor receptor 2 heterogeneity. *Cancer Sci*. 2016;107:1039-1046.** | https://onlinelibrary.wiley.com/doi/10.1111/cas.12966 |
| **Oh DY, Bang YJ. HER2-targeted therapies - a role beyond breast cancer. *Nat Rev Clin Oncol*. 2020;17:33-48.** | https://www.nature.com/articles/s41571-019-0268-3 |
| **Pondé N, Aftimos P, Piccart M. Antibody-drug conjugates in breast cancer: A comprehensive review. *Curr Treat Options Oncol*. 2019;20:37.** | https://link.springer.com/article/10.1007/s11864-019-0633-6 |

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| **Saura C, Oliviera M, Feng YH, et al. Neratinib + capecitabine versus lapatinib + capecitabine in patients with HER2+ metastatic breast cancer previously treated with ≥ 2 HER2-directed regimens: Findings from the multinational, randomized, phase III NALA trial. *J Clin Oncol*. 2019;37(15_suppl):1002.** | https://ascopubs.org/doi/abs/10.1200/JCO.2019.37.15_suppl.1002 |
| **Saura C, Oliviera M, Feng YH, et al. Neratinib plus capecitabine versus lapatinib plus capecitabine in HER2-positive metastatic breast cancer previously treated with ≥ 2 HER2-directed regimens: Phase III NALA trial. *J Clin Oncol*. 2020;38:3138-3149.** | https://ascopubs.org/doi/10.1200/JCO.20.00147 |
| **Swain SM, Miles D, Kim SB, et al. Pertuzumab, trastuzumab, and docetaxel for HER2-positive metastatic breast cancer (CLEOPATRA): End-of-study results from a double-blind, randomised, placebo-controlled, phase 3 study. *Lancet Oncol*. 2020;21:519-530.** | https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(19)30863-0/fulltext |
| **Trail PA, Dubowchik GM, Lowinger TB. Antibody drug conjugates for treatment of breast cancer: Novel targets and diverse approaches in ADC design. *Pharmacol Ther*. 2018;181:126-142.** | https://www.sciencedirect.com/science/article/abs/pii/S0163725817301936 |
| **Verma S, Miles D, Gianni L, et al. Trastuzumab emtansine for HER2-positive advanced breast cancer. *N Engl J Med.* 2012;367:1783-1791.** | https://www.nejm.org/doi/10.1056/NEJMoa1209124 |
| **von Minckwitz G, du Bois A, Schmidt M, et al. Trastuzumab beyond progression in human epidermal growth factor receptor 2-positive advanced breast cancer: A German Breast Group 26/Breast International Group 03-05 study. *J Clin Oncol*. 2009;27:1999-2006.** | https://ascopubs.org/doi/10.1200/JCO.2008.19.6618 |
| **Xu B, Yan M, Ma F, et al. Pyrotinib plus capecitabine versus lapatinib plus capecitabine for the treatment of HER2-positive metastatic breast cancer (PHOEBE): A multicentre, open-label, randomised, controlled, phase 3 trial. *Lancet Oncol.* 2021;22:351-360.** | https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(20)30702-6/fulltext |

## Adverse Events with Targeted Therapy

| Resource | Address |
|---|---|
| **Abuhelwa Z, Alloghbi A, Alqahtani A, Nagasaka M. Trastuzumab deruxtecan-induced interstitial lung disease/pneumonitis in ERBB2-positive advanced solid malignancies: A systematic review. *Drugs.* 2022;82:979-987.** | https://link.springer.com/article/10.1007/s40265-022-01736-w |
| **Brahmer JR, Lacchetti C, Schneider BJ, et al. Management of immune-related adverse events in patients treated with immune checkpoint inhibitor therapy: American Society of Clinical Oncology Clinical Practice Guideline. *J Clin Oncol.* 2018;36:1714-1768.** | https://ascopubs.org/doi/10.1200/JCO.2017.77.6385 |

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| **Curigliano G, Mueller V, Borges V, et al. Tucatinib versus placebo added to trastuzumab and capecitabine for patients with pretreated HER2+ metastatic breast cancer with and without brain metastases (HER2CLIMB): Final overall survival analysis. *Ann Oncol.* 2022;33:321-329.** | https://www.annalsofoncology.org/article/S0923-7534(21)04879-1/fulltext |
| **Hackshaw, MD, Danysh HE, Singh J, et al. Incidence of pneumonitis/interstitial lung disease induced by HER2-targeting therapy for HER2-positive metastatic breast cancer. *Breast Cancer Res Treat*. 2020;183:23-39.** | https://link.springer.com/article/10.1007/s10549-020-05754-8 |
| **Modi S, Saura C, Yamashita T, et al. Trastuzumab deruxtecan in previously treated HER2-positive breast cancer. *N Engl J Med.* 2020;382:610-621.** | https://www.nejm.org/doi/10.1056/NEJMoa1914510 |
| **Mudd TW, Guddati AK. Management of hepatotoxicity of chemotherapy and targeted agents. *Am J Cancer Res*. 2021;11:3461-3474.** | https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8332851/ |
| **Pessi MA, Zilembo N, Haspinger ER, et al. Targeted therapy-induced diarrhea: A review of the literature. *Crit Rev Oncol Hematol*. 2014;90:165-179.** | https://www.sciencedirect.com/science/article/abs/pii/S1040842813002552 |
| **Saura C, Oliviera M, Feng YH, et al. Neratinib plus capecitabine versus lapatinib plus capecitabine in HER2-positive metastatic breast cancer previously treated with ≥ 2 HER2-directed regimens: Phase III NALA trial. *J Clin Oncol*. 2020;38:3138-3149.** | https://ascopubs.org/doi/10.1200/JCO.20.00147 |
| **Skeoch S, Weatherley N, Swift AJ, et al. Drug-induced interstitial lung disease: A systematic review. *J Clin Med*. 2018;7:356.** | https://www.mdpi.com/2077-0383/7/10/356 |
| **Tarantino P, Modi S, Tolaney SM, et al. Interstitial lung disease induced by anti-ERBB2 antibody-drug conjugates: A review. *JAMA Oncol*. 2021;7:1873-1881.** | https://jamanetwork.com/journals/jamaoncology/article-abstract/2784880 |
| **Wolska-Washer A, Robak, T. Safety and tolerability of antibody-drug conjugates in cancer. *Drug Safety*. 2019;42;295-314.** | https://link.springer.com/article/10.1007/s40264-018-0775-7 |
| **Xuhong JC, Qi XW, Zhang Y, Jiang J. Mechanism, safety and efficacy of three tyrosine kinase inhibitors lapatinib, neratinib and pyrotinib in HER2-positive breast cancer. *Am J Cancer Res.* 2019;9:2103-2119.** | https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6834479/ |