BREAST CANCER (INVASIVE) TREATMENT REGIMENS (Part 1 of 4)

Clinical Trials: The NCCN recommends cancer patient participation in clinical trials as the gold standard for treatment.

Cancer therapy selection, dosing, administration, and the management of related adverse events can be a complex process that should be handled by an experienced healthcare team. Clinicians must choose and verify treatment options based on the individual patient; drug dose modifications and supportive care interventions should be administered accordingly. The cancer treatment regimens below may include both U.S. Food and Drug Administration-approved and unapproved indications/regimens. These regimens are only provided to supplement the latest treatment strategies.

These Guidelines are a work in progress that may be refined as often as new significant data becomes available. The NCCN Guidelines® are a consensus statement of its authors regarding their views of currently accepted approaches to treatment. Any clinician seeking to apply or consult any NCCN Guidelines® is expected to use independent medical judgment in the context of individual clinical circumstances to determine any patient's care or treatment. The National Comprehensive Cancer Network makes no warranties of any kind whatsoever regarding their content, use, or application and disclaims any responsibility for their application or use in any way.

Preferred Regimens for HER2-negative Disease[1]

NOTE: All recommendations are category 2A unless otherwise indicated.

REGIMEN	DOSING
Dose-dense AC followed by paclitaxel (Category 1)[2]	**Day 1:** Doxorubicin 60mg/m² IV **Day 1:** Cyclophosphamide 600mg/m² IV. Repeat cycle every 14 days for 4 cycles, **followed by:** **Day 1:** Paclitaxel 175mg/m² via 3-hour IV infusion. Repeat cycle every 14 days for 4 cycles. (All cycles are with filgrastim support)
Dose-dense AC followed by weekly paclitaxel (Category 1)[2]	**Day 1:** Doxorubicin 60mg/m² IV **Day 1:** Cyclophosphamide 600mg/m² IV. Repeat cycle every 14 days for 4 cycles, **followed by:** **Day 1:** Paclitaxel 80mg/m² via 1-hour IV infusion weekly for 12 weeks.
TC (Category 1)[3]	**Day 1:** Docetaxel 75mg/m² IV **Day 1:** Cyclophosphamide 600mg/m² IV. Repeat cycle every 21 days for 4 cycles. (All cycles are with filgrastim support)

Other Regimens for HER2-negative Disease[1]

AC (Category 1)[4]	**Day 1:** Doxorubicin 60mg/m² IV **Day 1:** Cyclophosphamide 600mg/m² IV. Repeat cycle every 21 days for 4 cycles.
TAC (Category 1)[5]	**Day 1:** Docetaxel 75mg/m² IV **Day 1:** Doxorubicin 50mg/m² IV day **Day 1:** Cyclophosphamide 500mg/m² IV. Repeat cycle every 21 days for 6 cycles. (All cycles are with filgrastim support)
FAC (Category 1)[6,7]	**Days 1 and 4 OR 1 and 8:** 5-fluorouracil 500mg/m² IV **Day 1:** Doxorubicin 50mg/m² IV (or via 72-hour continuous infusion) **Day 1:** Cyclophosphamide 500mg/m² IV. Repeat cycle every 21 days for 6 cycles.
CAF (Category 1)[8]	**Days 1–14:** Cyclophosphamide 100mg/m² PO **Days 1 and 8:** Doxorubicin 30mg/m² IV **Days 1 and 8:** 5-fluorouracil 500mg/m² IV. Repeat cycle every 28 days for 6 cycles.
CEF (Category 1)[9]	**Days 1–14:** Cyclophosphamide 75mg/m² PO **Days 1 and 8:** Epirubicin 60mg/m² IV **Days 1 and 8:** 5-fluorouracil 500mg/m² IV. With cotrimoxazole support. Repeat cycle every 28 days for 6 cycles.
CMF (Category 1)[10]	**Days 1–14:** Cyclophosphamide 100mg/m² PO **Days 1 and 8:** Methotrexate 40mg/m² IV **Days 1 and 8:** 5-fluorouracil 600mg/m² IV. Repeat cycle every 28 days for 6 cycles.
AC followed by docetaxel (Category 1)[11]	**Day 1:** Doxorubicin 60mg/m² IV **Day 1:** Cyclophosphamide 600mg/m² IV. Repeat cycle every 21 days for 4 cycles, **followed by:** **Day 1:** Docetaxel 100mg/m² IV. Repeat cycle every 21 days for 4 cycles.
AC followed by weekly paclitaxel (Category 1)[11]	**Day 1:** Doxorubicin 60mg/m IV **Day 1:** Cyclophosphamide 600mg/m IV. Repeat cycle every 21 days for 4 cycles, **followed by:** **Day 1:** Paclitaxel 80mg/m by 1-hour IV infusion weekly for 12 weeks.

continued

BREAST CANCER (INVASIVE) TREATMENT REGIMENS (Part 2 of 4)

Other Regimens for HER2-negative Disease (continued)

REGIMEN	DOSING
EC (Category 1)[12]	**Day 1:** Epirubicin 100mg/m² IV **Day 1:** Cyclophosphamide 830mg/m² IV. Repeat cycle every 21 days for 8 cycles.
FEC followed by docetaxel (Category 1)[13]	**Day 1:** 5-fluorouracil 500mg/m² IV **Day 1:** Epirubicin 100mg/m² IV **Day 1:** Cyclophosphamide 500mg/m² IV. Repeat cycle every 21 days for 3 cycles, **followed by:** **Day 1:** Docetaxel 100mg/m² IV. Repeat cycle every 21 days for 3 cycles.
FEC followed by weekly paclitaxel (Category 1)[14]	**Day 1:** 5-fluorouracil 600mg/m² IV **Day 1:** Epirubicin 90mg/m² IV **Day 1:** Cyclophosphamide 600mg/m² IV. Repeat cycle every 21 days for 4 cycles, **followed by:** 3 weeks of no treatment, **followed by:** Paclitaxel 100mg/m² IV infusion weekly for 8 weeks.
FAC followed by weekly paclitaxel (Category 1)	**Days 1 and 8 OR 1 and 4:** 5-fluorouracil 500mg/m² IV **Day 1:** Doxorubicin 50mg/m² IV (or via 72-hour continuous infusion) **Day 1:** Cyclophosphamide 500mg/m² IV. Repeat cycle every 21 days for 6 cycles, **followed by:** Paclitaxel 80mg/m² via 1-hour IV infusion weekly for 12 weeks.
Preferred Regimens for HER2-positive Disease[1]	
AC followed by paclitaxel with trastuzumab[15]	**Day 1:** Doxorubicin 60mg/m² IV **Day 1:** Cyclophosphamide 600mg/m² IV. Repeat cycle every 21 days for 4 cycles, **followed by:** **Day 1:** Paclitaxel 80mg/m² via 1-hour IV infusion weekly for 12 weeks, with: Trastuzumab 4mg/kg IV with first dose of paclitaxel, **followed by:** Trastuzumab 2mg/kg IV weekly to complete 1 year of treatment. As an alternative, trastuzumab 6mg/kg IV every 21 days may be used following the completion of paclitaxel, and given to complete 1 year of trastuzumab treatment. Cardiac monitoring at baseline, 3, 6, and 9 months.
AC followed by paclitaxel with trastuzumab + pertuzumab	**Day 1:** Doxorubicin 60mg/m² IV **Day 1:** Cyclophosphamide 600mg/m² IV. Repeat cycle every 21 days for 4 cycles, **followed by:** **Day 1:** Pertuzumab 840mg IV followed by 420mg IV **Day 1:** Trastuzumab 8mg/kg IV followed by 6mg/kg IV **Days 1, 8, and 15:** Paclitaxel 80mg/m² IV. Repeat cycle every 21 days for 4 cycles. **Day 1:** Trastuzumab 6mg/kg IV. Repeat cycle every 21 days to complete 1 year of trastuzumab therapy. Cardiac monitoring at baseline, 3, 6, and 9 months.
Dose-dense AC followed by paclitaxel with trastuzumab[16]	**Day 1:** Doxorubicin 60mg/m² IV **Day 1:** Cyclophosphamide 600mg/m² IV. Repeat cycle every 14 days for 4 cycles, **followed by:** **Day 1:** Paclitaxel 175mg/m² via 3-hour IV infusion (All cycles are with filgrastim support). Repeat cycle every 14 days for 4 cycles, **plus:** Trastuzumab 4mg/kg IV with first dose of paclitaxel, **followed by:** Trastuzumab 2mg/kg IV weekly to complete 1 year of treatment. As an alternative, trastuzumab 6mg/kg IV every 21 days may be used following the completion of paclitaxel, and given to complete 1 year of trastuzumab treatment. Cardiac monitoring at baseline, 3, 6, and 9 months.
TCH[17]	**Day 1:** Docetaxel 75mg/m² IV **Day 1:** Carboplatin AUC 6mg•min/mL IV. Repeat cycle every 21 days for 6 cycles, with: **Day 1:** Trastuzumab 4mg/kg IV week 1, followed by 2mg/kg IV for 17 weeks, **followed by:** Trastuzumab 6mg/kg IV. Repeat cycle every 21 days to complete 1 year of trastuzumab therapy. Cardiac monitoring at baseline, 3, 6, and 9 months.

continued

BREAST CANCER (INVASIVE) TREATMENT REGIMENS (Part 3 of 4)

Preferred Regimens for HER2-positive Disease (continued)

REGIMEN	DOSING
TCH chemotherapy + pertuzumab[18]	**Day 1:** Trastuzumab 8mg/kg IV followed by 6mg/kg IV **Day 1:** Pertuzumab 840mg IV followed by 420mg IV **Day 1:** Docetaxel 75mg/m² IV **Day 1:** Carboplatin AUC 6mg•min/mL IV. Repeat cycle every 21 days for 6 cycles, **followed by:** **Day 1:** Trastuzumab 6mg/kg IV. Repeat cycle every 21 days to complete 1 year of trastuzumab therapy. Cardiac monitoring at baseline, 3, 6, and 9 months.

Other Regimens for HER2-positive Disease[1]

AC followed by docetaxel with trastuzumab[17]	**Day 1:** Doxorubicin 60mg/m² IV **Day 1:** Cyclophosphamide 600mg/m². Repeat cycle every 21 days for 4 cycles, **followed by:** **Day 1:** Docetaxel 100mg/m² IV. Repeat cycle every 21 days for 4 cycles, with: Trastuzumab 4mg/kg IV week 1, followed by 2mg/kg IV weekly for 11 weeks, **followed by:** **Day 1:** Trastuzumab 6mg/kg IV. Repeat cycle every 21 days to complete 1 year of trastuzumab therapy. Cardiac monitoring at baseline, 3, 6, and 9 months.
AC followed by docetaxel with trastuzumab and pertuzumab[18]	**Day 1:** Doxorubicin 60mg/m² IV **Day 1:** Cyclophosphamide 600mg/m² IV. Repeat cycle every 21 days for 4 cycles, **followed by:** **Day 1:** Pertuzumab 840mg IV followed by 420mg IV **Day 1:** Trastuzumab 8mg/kg IV followed by 6mg/kg IV **Day 1:** Docetaxel 75–100mg/m² IV. Repeat cycle every 21 days for 4 cycles, **followed by:** **Day 1:** Trastuzumab 6mg/kg IV. Repeat cycle every 21 days to complete 1 year of trastuzumab therapy. Cardiac monitoring at baseline, 3, 6, and 9 months.
FEC followed by pertuzumab + trastuzumab + docetaxel[18]	**Day 1:** Fluorouracil 500mg/m² IV **Day 1:** Epirubicin 100mg/m² IV **Day 1:** Cyclophosphamide 600mg/m² IV. Repeat cycle every 21 days for 3 cycles, **followed by:** **Day 1:** Pertuzumab 840mg IV followed by 420mg IV **Day 1:** Trastuzumab 8mg/kg IV followed by 6mg/kg IV **Day 1:** Docetaxel 75–100mg/m² IV. Repeat cycle every 21 days for 3 cycles, **followed by:** **Day 1:** Trastuzumab 6mg/kg IV. Repeat cycle every 21 days to complete 1 year of trastuzumab therapy. Cardiac monitoring at baseline, 3, 6, and 9 months.
FEC followed by pertuzumab + trastuzumab + paclitaxel[18]	**Day 1:** Fluorouracil 500mg/m² IV **Day 1:** Epirubicin 100mg/m² IV **Day 1:** Cyclophosphamide 600mg/m² IV. Repeat cycle every 21 days for 3 cycles, **followed by:** **Day 1:** Pertuzumab 840mg IV followed by 420mg IV **Day 1:** Trastuzumab 8mg/kg IV followed by 6mg/kg IV **Days 1, 8, and 15:** Paclitaxel 80mg/m² IV. Repeat cycle every 21 days for 3 cycles, **followed by:** **Day 1:** Trastuzumab 6mg/kg IV. Repeat cycle every 21 days to complete 1 year of trastuzumab therapy. Cardiac monitoring at baseline, 3, 6, and 9 months.
Pertuzumab + trastuzumab + docetaxel followed by FEC[19]	**Day 1:** Pertuzumab 840mg IV followed by 420mg IV **Day 1:** Trastuzumab 8mg/kg IV followed by 6mg/kg IV **Day 1:** Docetaxel 75–100mg/m² IV. Repeat cycle every 21 days for 4 cycles, **followed by adjuvant therapy:** **Day 1:** Fluorouracil 600mg/m² IV **Day 1:** Epirubicin 90mg/m² IV **Day 1:** Cyclophosphamide 600mg/m² IV. Repeat cycle every 21 days for 3 cycles, **followed by:** **Day 1:** Trastuzumab 6mg/kg IV. Repeat cycle every 21 days to complete 1 year of trastuzumab therapy. Cardiac monitoring at baseline, 3, 6, and 9 months.

continued

BREAST CANCER (INVASIVE) TREATMENT REGIMENS (Part 4 of 4)

Other Regimens for HER2-positive Disease (continued)

REGIMEN	DOSING
Pertuzumab + trastuzumab + paclitaxel followed by FEC[19]	**Day 1:** Pertuzumab 840mg IV followed by 420mg IV **Day 1:** Trastuzumab 8mg/kg IV followed by 6mg/kg IV **Days 1, 8, and 15:** Paclitaxel 80mg/m^2 IV. Repeat cycle every 21 days for 4 cycles, **followed by adjuvant therapy:** **Day 1:** Fluorouracil 600mg/m^2 IV **Day 1:** Epirubicin 90mg/m^2 IV **Day 1:** Cyclophosphamide 600mg/m^2 IV. Repeat cycle every 21 days for 3 cycles, **followed by:** **Day 1:** Trastuzumab 6mg/kg IV. Repeat cycle every 21 days to complete 1 year of trastuzumab therapy. Cardiac monitoring at baseline, 3, 6, and 9 months.
Paclitaxel + trastuzumab[20]	**Day 1:** Paclitaxel 80mg/m^2 IV weekly for 12 weeks, **plus** Trastuzumab 4mg/kg IV with first dose of paclitaxel, **followed by:** **Day 1:** Trastuzumab 2mg/kg IV weekly OR 6mg/kg IV. Repeat cycle every 21 days to complete 1 year of treatment. Cardiac monitoring at baseline, 3, 6, and 9 months.

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