

Table SI. Baseline characteristics.

First author, year	Study type	BC type	Sample size (age)	Before or after surgery	Menopausal status (Pre/Post)	Tumor size (≤ 2.0 , 2.1-5.0, ≥ 5.1) or (T0-1/T2/T3-4)	Lymph node status (pN1/pN2-3) or (cN0-1/cN2-3)	Tumor grade (G1/G2/G3)	ER/P status	HER2 status	Ki-67 positive ($\leq 20\%$ / $>20\%$)	Dose-dense type	Agent type	Treatment cycle	(Ref.)
Schnee weiss, 2022	RCT, phase III	Early BC										Intense DD			(21)
DD			470/-	470/0	54/24	43/82/22	136/19	1/33/44	78/0	0/78	0/78		EPC	q2w x 3	
S			475	475/0	55/27	53/76/23	140/18	1/29/52	82/0	0/82	0/8		PM(Cb)	weekly	
Liu, 2021[22]	RCT, phase II	All BC													(22)
DD			50	NA	31/19	TI+T2:38 T3+T4:12 T3+T4:20	17/33	0/19/31	0/50	0/50	$\leq 50\%$: $>50\%$ 12/38		DC(P)	14d/cycle	

[illegible]

[illegible]

n, 2017	phase III, CRU K/05/19	BC													
DD			1:1086	NA	DD1:396/689 DD2:402/679	DD1:451/572/61 DD2:438/588/58	(pN0/pN1/pN2-3) DD1:508/447/131 DD2:505/436/143	DD1:37/418/630	DD1:784/296 DD2:789/286	DD1:218/862 DD2:205/870	NA	Accelerated	DD1:peg filgrastim+CMF DD2:peg filgrastim+capecitabine	DD1:q3w x 4 DD2:q4w x 4	
S			S1:1116 S2:1105	NA	S1:428/679 S2:434/667	S1:473/584/59 S2:440/601/63	(pN0/pN1/pN2-3) S1:533/427/156 S2:508/470/127	S1:47/415/654 S2:39/442/622	S1:809/302 S2:814/286	S1:196/915 S2:212/888	NA	Accelerated	S1:E+CMF S2:E+capecitabine	S1:q4w x 4 S2:q3w x 4	
Lambertini, 2017	RCT, phase III, MIG1	All BC													(29)
DD			267	(Mast	NA	141/114/1	(pN0/	15/140	158/9	24/131	NA	DD	FEC+P	q2w x 6	

				ecto my/L umpe ctom y) 113/1 52/2		0/2	pN1/ pN2-3) 94/122/ 49/2	/79/33	1/18	/112					
S			261	(Mast ecto my/L umpe ctom y) 108/1 52/1	NA	135/106/1 6/4	(pN0/ pN1/ pN2-3) 93/104/ 63/1	16/118 /94/33	150/9 5/16	20/118/ 123	NA	DD	EC+P	q3w x 6	
Lamber tini, 2017	RCT, phase III, GIM2	All BC													(29)
DD			495	211/2 84	NA	253/206/3 3/3	0/310/1 85	30/234 /228/3	401/8 0/14	118/28 6/91	NA	DD	FEC+P	4 cycles	
S			526	229/2 97	NA	257/222/4 6/1	0/326/2 00	27/228 /270/1	425/8 6/15	119/33 4/73	NA	DD	EC+P	4 cycles	
Bao, 2016	RCT	All BC													(30)
DD			23	0/23	NA	(AJCC	NA	1/8/14	0/23	0/23	NA	DD	THP+TA	14 dx 6	

						/UICC: I/II/III) 0/13/10							X		
S			20	0/20	NA	(AJCC /UICC: I/II/III) 0/12/8	NA	2/7/11	0/20	0/20	NA	DD	THP+TA X	21 dx 6	
Foukakis, 2016	RCT, phase III	Early BC													(31)
DD			1001	(Mastectomy/Breast-conserving surgery) 460/541	515/441/45	415/507/76/5	(pN0/pN1/pN2-3) 31/591/379	59/484/453/5	805/195/1	159/841/1	294/322/385	Tailored dose-density	EC+T	q2w x 4	
S			1002	(Mastectomy/Breast-conserving	521/436/45	413/520/68/1	(pN0/pN1/pN2-3) 30/555/417	54/512/435/1	795/206/1	182/820/0	294/341/367	Tailored dose-density	EC+T	q3w x 3	

				surge ry) 472/5 30											
Del Mastro, 2015	RCT, phase III	Early BC													(32)
DD			1:500	(Mast ecto my/L umpe ctom y) DD1: 287/3 13 DD2: 204/2 98	DD1:2 63/237 DD2:2 32/270	DD1:253/ 208/38/1 DD2:262/ 202/35/3	DD1:28 4/316/0 DD2:31 9/183/0	DD1:3 0/240/ 214/16 DD2:3 5/225/ 229/13	DD1:4 01/85/ 1 DD2:4 07/83/ 12	DD1:1 21/299 /80 DD2:1 05/318 /79	DD1:17 3/232/9 5 DD2:18 6/214/1 02	DD	EC+P	q2wx 4	
S			S1:544 S2:545	(Mast ecto my/L umpe ctom y) S1:22	S1:245 /299 S2:281 /264	S1:262/23 3/48/1 S2:283/21 8/40/4	S1:319/ 225/1 S2:327/ 218/1	S1:21/ 238/26 6/19 S2:30/ 236/27 0/9	S1:44 2/88/1 4 S2:42 0/103/ 22	S1:131 /332/8 1 S2:123 /344/7 8	S1:164/ 269/111 S2:153/ 273/119	DD	EC+P	q3wx 4	

				4/320 S2:20 7/338											
Zhou, 2015	Retrospective Study	All BC													(33)
DD			43	0/43	NA	NA	NA	NA	0/43	0/43	NA	DD	THP+TAX	14 dx 6	
S			43	0/43	NA	NA	NA	NA	0/43	0/43	NA	DD	THP+TAX	21 dx 6	
Swain, 2013[34]	RCT, phase III, The NSA BP B-38 Trial	Early BC													(34)
DD			DD1:1634 DD2:1630	(Mastectomy/Lumpectomy) DD1:820/7	DD1:756/816/62 DD2:752/818/60	(0-2/2.1-4/ ≥ 4) DD1:630/706/236/62 DD2:668/677/225/60	DD1:1068/566 DD2:1066/564	NA	DD1:2399/325 DD2:1296/334	NA	NA	DD	AC+PG	DD1:q2wx 4 DD2:q2wx 4	

				62/62 DD2: 816/7 54/60											
S			1630	(Mastecto my/Lumpectomy) :812/751/67	:741/822/67	(0-2/2.1-4/≥4) 656/668/239/67	1067/563	NA	1296/334	NA	NA	DD	TAC	q3wx 6	
Zhu, 2013	Clinical trial	Advanced BC													(35)
DD			24	0/24	NA	NA	NA	NA	0/24	NA	NA	DD	Pirenzosin+P	q2wx 4	
S			:27	0/27	NA	NA	NA	NA	0/27	NA	NA	DD	Pirenzosin+P	q3wx 4	
Gogas, 2012	RCT, phase III	All BC													(36)
DD			551	NA	261/290	(<2/≥2) 171/378	265/286	(Nuclear grade I-	ER: DD:378/171	183/348	NA	DD	AEP(CMF+G-CSF)	14dx 3	

								II/III) 283/20 6	PR: DD:32 7/221						
S			535	NA	241/29 4	(<2/≥2) 174/359	261/274	(Nucle ar gradeI- II/III) 279/25 4	ER: 371/1 64 PR: 337/1 96	177/33 9	NA	DD	EP(CMF +G-CSF)	21dx 4	
Jin, 2012	Clinic al trial	All BC													(37)
DD			23	0/23	NA	NA	NA	(IIa/IIb /IIIa/III b/IIIc) 6/5/4/5 /3	NA	NA	NA	DD	THP+TA X	14 dx 4	
S			22	0/22	NA	NA	NA	(IIa/IIb /IIIa/III b/IIIc) 5/6/5/4 /2	NA	NA	NA	DD	THP+TA X	21 dx 4	
Arun, 2011	RCT, phase III	All BC													(38)
DD			99	0/99	54/44	28/72	35/65	0/16/8 4	ER: 32/49	NA	NA	Intense DD	5-FU+D +FAC	18 dx 4	

									PR: 30/46						
S			100	0/100	52/49	29/73	44/58	2/16/8 1	ER: 40/45 PR: 47/38	NA	NA	Intense DD	FAC+G- CSF	21 dx 4	
Untch, 2011	RCT, phase III	All BC													(39-4 0)
DD			363	363/0	NA	(<4/≥4) 242/99/22	(involve d/not involve d) 135/182 /46	(1-2/3) 119/98 /146	151/7 1/141	(Score 0 or 1+/ score 2+, FISH-/ Score 2+, FISH+/ Score 2+, no FISH/ Score 3+) 154/12 7/8/13/ 28/33 8/41	NA	Intense DD	E+T+C MF	q2 wx 3	

S			370	370/0	NA	232/124/14	(involved/not involved) 142/185/43	(1-2/3) 119/116/135	159/74/137	(Score 0 or 1+/ score 2+, FISH-/ Score 2+, FISH+/ Score 2+, no FISH/ Score 3+) 154/131/10/6/28/41	NA	Intense DD	EC+T	q3 wx 4	
Burnell, 2010	Clinical trial	All BC													(41)
DD			701	(Mastectomy/Lumpectomy) 351/350	NA	240/377/80/4	501/200	NA	ER: 413/288	74/494/133	NA	DD	EC+T	14 dx 6	

S			S1:701 S2:702	(Mastecto my/Lumpectomy) S1:346/355 S2:348/354	NA	S1:240/391/70/0 S2:255/383/64/0	S1:499/202 S2:501201	NA	ER: S1:418/283 S2:413/289	S1:90/492/119 S2:78/481/143	NA	DD	S1:CEF S2:AC+T	S1:21 d x4 S2:21 d x4	
Moebus , 2010	RCT, phase III	All BC													(42)
DD			643	369/274	306/337	(pT1/pT2/ pT3-4) 181/362/100	(4-9≥10) 376/267	15/310/310	ER: 465/178 PE: 438/205	162/371/107	NA	Intense DD	ETC	q2 wx3	
S			612	304/308	292/320	(pT1/pT2/ pT3-4) 99/330/83	(4-9≥10) 358/254	11/293/302	ER: 438/174 PE:	S:150/346/115	NA	Intense DD	ETC	q3 wx4	

									411/201						
Untch, 2009	RCT, phase III	All BC													(43)
DD			330	(Mastecto my/Lumpectomy) 246/82	NA	2/183/147	(positive/negative) 175/113/41	NA	191/110	NA	NA	Intense DD	EP	q2 wx3	
S			335	(Mastecto my/Lumpectomy) 248/81	NA	0/166/160	(positive/negative) 179/108/44	NA	206/93	NA	NA	Intense DD	EP	q3 wx4	
Venturi ni, 2005	RCT, phase III	Early BC													(44)
DD			604	(Mastecto my/B	365/331/8	288/285/25/6	(positive/negative)	30/315/189/70	ER: 311/255/38	NA	NA	DD	FEC	q3 wx6	

				reast- conse rving surge ry) 277/3 25/2			387/217		PR: 241/2 93/70						
S			610	(Mast ecto my/B reast- conse rving surge ry) :273/ 334/3	259/33 9/12	210/257/3 5/8	(positiv e/negati ve) 396/214	33/288 /216/7 3	ER: 245/3 17/48 PR: 235/2 87/88	NA	NA	DD	FEC	q3 wx6	
Baldini, 2003	RCT, phase III	Adva nced BC													(45)
DD			73	NA	34/39	(IIIA/IIIB/ IBC) 15/37/18/ 3	NA	NA	ER: 28/28/ 17 PR: 19/34/ 20	NA	NA	DD	ICT+CE F+GM-C SF	q2 wx3	

S			77	NA	37/40	(IIIA/IIIB/ IBC) 19/37/18/ 1	NA	NA	ER: 33/28/ 16 PR: 26/36/ 15	NA	NA	DD	ICT+CE F	q3 wx3	
Citron, 2003	RCT	All BC													(46)
DD			DD1:49 3 DD2:49 5	(Mast ecto my/L umpe ctom y) DD1: 306/1 73/14 DD2: 301/1 87/7	DD1:2 37/249/ 7 DD2:2 38/247/ 10	(<2/≥2) DD1:212/ 271/10 DD2:199/ 287/9	DD1:29 2/201/0 DD2:29 3/202/0	NA		NA	NA	DD	DD1:DP C+ G-CSF DD2:DC P+filgras tim	DD1:q2 wx4 DD2:q2 wx4	
S			S1:484 S2:501	(Mast ecto my/L umpe ctom y) DD1:	S1:241 /235/8 S2:241 /254/6	(<2/≥2) S1:185/28 9/10 S2:194/29 2/15	S1:287/ 196/1 S2:301/ 199/1	NA		NA	NA	DD	S1: DPC DD2:DC P+filgras tim S2:DCP	S1:q3 wx4 S2:q3 wx4	

				306/1 73/14 S1:31 2/162 /10 DD2: 301/1 87/7 S2:30 0/185 /16											
Therass e, 2003	RCT, phase III	Adva nced BC													(47)
DD			224	NA	52/47/1	(T0-2/T3/ T4a,b,c/T 4d) 4/9/41/45/ 1	58/40/2	NA	ER: 42/16/ 42	NA	NA	DD	EC+filgr astim	14dx6	
S			224	NA		(T0-2/T3/ T4a,b,c/T 4d) 4/9/39/47/ 1	54/44/2	NA	ER: 38/23/ 39	NA	NA	DD	CEF	28dx6	

BC, breast cancer; Idd, intense dose-dense; S, standardized treatment; E, epirubicin; P, paclitaxel; C, cyclophosphamide; M, non-pegylated liposomal doxorubicin; Cb, carboplatin; D and A, Doxorubicin; F, fluorouracil; T, docetaxel; H, herceptin; T, taxol; G, gemcitabine; P, Pirenzosin; ICT, induction chemotherapy.

Table SII. Risk of bias assessment using the Newcastle-Ottawa Scale for retrospective studies.

First author, year	Adequate case definition	Representativeness of the cases	Selection of controls	Definition of controls	Comparability of cases and controls (/2)	Ascertainment of exposure	Same method of ascertainment for cases and controls	Non-response rate	Overall rating and total score / 10	(Ref.)
He, 2020	1	1	0	1	1	1	1	1	7	(24)
Zhou, 2015	1	1	0	1	1	1	1	1	7	(33)