

Supplementary Materials

A systematic review on the effect of immediate autologous microsurgical breast reconstruction on the timely initiation of adjuvant therapy

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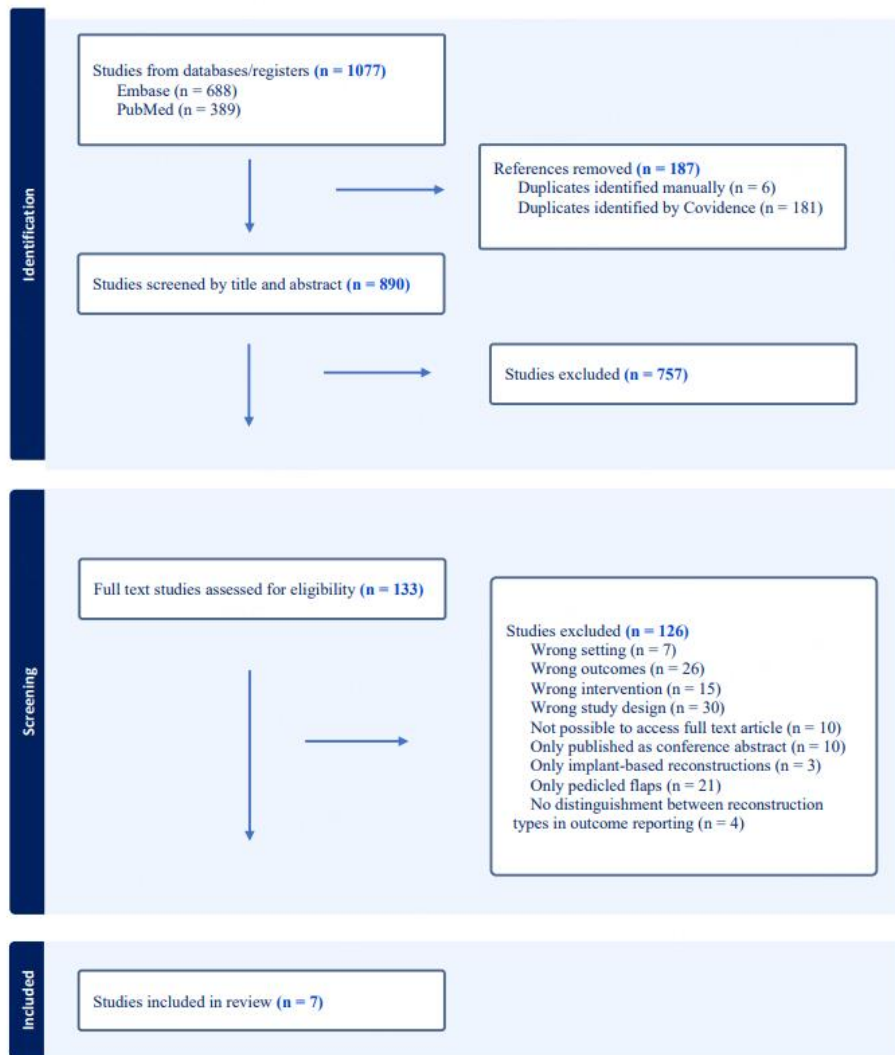
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Supplementary Figure 1. PRISMA flow chart.



Supplementary Table 1. Search strategy

Database	Search	Number of hits
Embase December 12th Filters: English	#1: "Breast Neoplasm" [Mesh]	309.946

<p>Supplementary Table 2: Search strategy Pubmed and Embase</p>	<p>#2:” breast Neoplasm [Text] OR "breast tumor"[Text Word] OR "breast cancer"[Text Word] OR "breast carcinoma"[Text Word] OR "mammary carcinoma"[Text Word] OR "mammary cancer"[Text Word] OR "mammary neoplasm"[Text Word] OR "breast malignant tumor"[Text Word] OR "breast malignant neoplasm"[Text Word]</p>	<p>340.776</p>
	<p>#3:” Breast Neoplasm” [Mesh] OR” breast Neoplasm [Text] OR "breast tumor"[Text Word] OR "breast cancer"[Text Word] OR "breast carcinoma"[Text Word] OR "mammary carcinoma"[Text Word] OR "mammary cancer"[Text Word] OR "mammary neoplasm"[Text Word] OR "breast malignant tumor"[Text Word] OR "breast malignant neoplasm"[Text Word]</p>	<p>346.402</p>
	<p>#4:” Mastectomy” [Mesh]</p>	<p>31.569</p>
	<p>#5: mastectomy [Text Word] OR "nipple-sparing mastectomy"[Text Word] OR "skin-sparing mastectomy"[Text Word] OR “therapeutic mastectomy” [Text Word] OR “prophylactic mastectomy” [Text Word]</p>	<p>41.121</p>
	<p>#6:” Mastectomy” [Mesh] OR mastectomy [Text Word] OR "nipple-sparing mastectomy"[Text Word] OR "skin-sparing mastectomy"[Text Word] OR “therapeutic mastectomy” [Text Word] OR “prophylactic mastectomy” [Text</p>	<p>41.121</p>

	Word]	
	#7:” Mammoplasty” [Mesh]	16.271
	#8: “Mammoplasty [Text Word] OR” mammoplasty [Text Word] OR” Breast reconstruction [Text Word] OR” Reconstruction Breast” [Text Word] OR” Immediate autologous breast reconstruction” [Text Word] OR” autologous immediate breast reconstruction” [Text Word]	20.123
	#9:” Mammoplasty” [Mesh] OR “Mammoplasty [Text Word] OR” mammoplasty [Text Word] OR” Breast reconstruction [Text Word] OR” Reconstruction Breast” [Text Word] OR” Immediate autologous breast reconstruction” [Text Word] OR” autologous immediate breast reconstruction” [Text Word]	21.509
	#10:” Adjuvant chemoradiotherapy” [Mesh] OR” Adjuvant chemotherapy [Mesh]	43.761
	#11:” Adjuvant chemoradiotherapy” [Text Word] OR” Adjuvant chemotherapy [Text Word] OR” chemotherapy adjuvant [Text Word] OR” adjuvant radiation” [Text Word]	61.684
	#12: Adjuvant chemoradiotherapy” [Mesh] OR” Adjuvant chemotherapy [Mesh] OR” Adjuvant chemoradiotherapy” [Text Word] OR” Adjuvant chemotherapy [Text Word] OR” chemotherapy adjuvant [Text Word] OR” adjuvant radiation” [Text Word]	64.995
	#13: Breast Neoplasm” [Mesh] OR” breast Neoplasm [Text] OR ”breast tumor” [Text Word] OR ”breast cancer” [Text Word]	389

	<p>OR "breast carcinoma"[Text Word] OR "mammary carcinoma"[Text Word] OR "mammary cancer"[Text Word] OR "mammary neoplasm"[Text Word] OR "breast malignant tumor"[Text Word] OR "breast malignant neoplasm"[Text Word AND " Mastectomy" [Mesh] OR mastectomy [Text Word] OR "nipple-sparing mastectomy"[Text Word] OR "skin- sparing mastectomy"[Text Word] OR "therapeutic mastectomy" [Text Word] OR "prophylactic mastectomy" [Text Word] AND Mammoplasty" [Mesh] OR "Mammoplasty [Text Word] OR" mammoplasty [Text Word] OR" Breast reconstruction [Text Word] OR" Reconstruction Breast" [Text Word] OR" Immediate autologous breast reconstruction" [Text Word] OR" autologous immediate breast reconstruction" [Text Word] AND Adjuvant chemoradiotherapy" [Mesh] OR" Adjuvant chemotherapy [Mesh] OR" Adjuvant chemoradiotherapy" [Text Word] OR" Adjuvant chemotherapy [Text Word] OR" chemotherapy adjuvant [Text Word] OR" adjuvant radiation" [Text Word]</p>	
Embase	#1: Exp breast tumor/	680.497
December 13th	#2: (breast neoplasm* or breast tumor* or	753.515

<p>breast cancer* or breast carcinoma* or breast malignant tumor* or breast malignant neoplasm*) mp. [mp = title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word]</p>	
#3: 1 or 2	764.708
#4: Exp mastectomy/	77.203
#5: (mastectomy* or nipple-sparing mastectomy* or skin-sparing mastectomy or therapeutic mastectomy* or prophylactic mastectomy*) mp. [mp = title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word]	82.123
#6: 4 or 5	84.395
#7: Exp breast reconstruction/	30.116
#8: (breast reconstruction* or mammaplasty* or reconstruction breast* or immediate autologous breast reconstruction* or autologous immediate breast reconstruction*) mp. [mp = title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word]	25.886
#9: 7 or 8	31.759

	#10: Exp adjuvant chemoradiotherapy/	7804
	#11: (adjuvant chemoradiotherapy* or adjuvant chemotherapy* or chemotherapy adjuvant* or adjuvant radiotherapy* or adjuvant radiation*) mp. [mp = title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word]	100.194
	#12: 10 or 11	100.194
	#13: 3 and 6 and 9 and 12	692
	#14: limit 13 to English language	688

Supplementary Table 2: Study characteristics

Author and publication year	Study characteristics			Patient inclusion			Number of patients receiving adjuvant treatment	
	Design	Period	Country	IBR-group (only free flaps)	Free flap type	Mastectomy-only group	IBR-group (only free flaps)	Mastectomy-only group
Wilson <i>et al.</i> 2004	Retrospective case-control study	1995 - 2000	UK	10	- DIEP - S-GAP - I-GAP	95	12 (chemo therapy)	95 (chemo therapy)
Alderman <i>et al.</i> 2010	Retrospective case-control study	1997 -2003	USA	154	- Free TRAM	792	127 (chemo therapy)	573 (chemo therapy)
Kontos <i>et al.</i> 2010	Retrospective case-control study	2002 -2007	UK	27	- DIEP - Free TRAM - S-GAP	139	27 (chemo therapy)	139 (chemo therapy)
Jeonghui <i>et al.</i> 2011	Retrospective case-control study	2008 - 2010	Korea	9	- DIEP	552	9 (chemo therapy)	552 (chemo therapy)
O'Connell <i>et al.</i> 2019	Retrospective case-control study	July 2016 - December 2016	UK	228	- DIEP - SIEA - S-GAP	1532	93 (either chemo therapy or	804 (either chemo therapy or radio therapy or both)

					- I-GAP - TUG		radio therapy or both)	
Huttunen <i>et al.</i> 2022	Retrospective case-control study	2012 - 2018	Finland	71	- DIEP - Free TRAM - SIEA - TMG	459	71 (chemo therapy)	459 (chemo therapy)
Nguyen <i>et al.</i> 2023	Retrospective cross-sectional study	2019 - 2021	Vietnam	30	- DIEP	-	21 (chemo therapy)	-

Supplementary table 3: Complications

Author and publication year	Complications					
Wilson <i>et al.</i> 2004	-	-	-	-	-	-
Alderman <i>et al.</i> 2010	-	-	-	-	-	-
Kontos <i>et al.</i> 2010	-	-	-	-	-	-
Lee <i>et al.</i> 2011	2 (22.2%)	14 (2.5%)	-	-	-	-
O'Connell <i>et al.</i> 2019	94 (41%)	570 (38%)	38 (17%)	76 (5%)	1,66 [1.07-2.57] <i>P</i> = 0.025	4.88 [2.63-9.04] <i>P</i> ≤ 0.001
Huttunen <i>et al.</i> 2022	-	-	-	-	-	-
Pham Thi <i>et al.</i> 2023	16 (53%)	-	-	-	-	-

Supplementary table 4: Time to adjuvant therapy

Author and publication year	Time to adjuvant therapy		
Wilson <i>et al.</i> 2004	Mean 38 days (IQR 26-52)	Mean 28 days (IQR 16-52)	-
Alderman <i>et al.</i> 2010	More than 56 days (8 weeks) in 21,6 % of patients	More than 56 days (8 weeks) in 4,4 % of patients	-
Kontos <i>et al.</i> 2010	<p>Mean 55 days (IQR 47-64)</p> <p>Number of patients whose commencement of chemotherapy exceeded:</p> <ul style="list-style-type: none"> - 6 weeks: 5 - 8 weeks: 6 - 10 weeks: 5 - 12 weeks: 2 	<p>Mean 40 days (IQR 37-44)</p> <p>Number of patients whose commencement of chemotherapy exceeded:</p> <ul style="list-style-type: none"> - 6 weeks: 17 - 8 weeks: 11 - 10 weeks: 7 - 12 weeks: 5 	<p>$P = 0.0025$</p> <ul style="list-style-type: none"> - chi-square = 15.28 (p=0.0001) - chi-square = 14.51 (p=0.0002) - chi-square = 6.67 (p=0.0098) - chi-square = 0.81 (p=0.37)
Lee <i>et al.</i> 2011	Mean 27.1 days (IQR 21-40)	Mean 24.9 days (IQR 18-31)	-
O'Connell <i>et al.</i> 2019	<p>Mean 57 days (IQR 42-71)</p> <p>Chemotherapy: more than 90 days (>12 weeks) in 6.5 % of patients</p>	<p>Mean 52 days (IQR 41-66)</p> <p>Chemotherapy: more than 90 (>12 weeks) in 5.1% of patients</p>	<p>aHR = 0,84 [0.71-0.99]</p> <p>$P = 0.035$</p> <p>$P = 0.23$</p>

	Radiotherapy: more than 56 days (8 weeks) in 59.5 % of patients	Radiotherapy: more than 56 days (8 weeks) in 62.8 % of patients	$P = 0.31$
Huttunen <i>et al.</i> 2022	More than 42 days (6 weeks) in 46.5% of patients	More than 42 days (6 weeks) in 22.2% of patients	-
Pham Thi <i>et al.</i> 2023	Mean 34.7 days (IQR 21-49)	-	-