

Radiotherapy or Surgery of the Axilla After a Positive Sentinel Node in Breast Cancer: 10-Year Results of the Randomized Controlled EORTC 10981-22023 AMAROS Trial



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The purpose of the AMAROS Trial

- ALND vs ART
- Patients with T1/T2 disease
- Clinical node negative breast cancer
- BUT → Positive SLNB

NOW AT 10 years

- Updated results on efficacy and safety outcomes
- Locoregional recurrence
- Secondary primary cancers



METHODS

- ▶ Open-label multicenter phase III noninferiority trial
- ▶ 4806 patients underwent SLNB
- ▶ 1425 patients were node positive
- ▶ Randomly assigned to either ALND or ART
- ▶ ALND group = 744
- ▶ ART = 681

ALND → Level II + at least 10 nodes

ART → 25 fractions of 2Gy/biological equivalent dose to all 3 levels

Adjuvant ART after ALND → 4/more positive nodes were found

PRIMARY ENDPOINTS:

- 5-year ARR – tumor recurrence in lymph nodes in ipsilateral axilla/infraclavicular fossa/interpectoral area

SECONDARY ENDPOINTS:

- ARFS – Axillary recurrence free survival (time to axillary recurrence/death of any cause)
- Overall survival
- Disease free survival – Any sign of disease progression, including secondary cancer
 - Contralateral breast/DCIS/Non breast cancer
 - Death
- Lymphoedema
- Shoulder mobility
- Quality of life

REVIEW OF 5 YEAR RESULTS

	ALND	ART
ARR – Axillary recurrence rate	0.43%	1.19%
Overall survival	93.3%	92.5%
DFS – Disease free survival	86.9%	82.7%
Lymphoedema		Significantly less
Shoulder mobility	No significant difference	
QOL	No difference observed	

		Stage	Primary tumour (T)*	Regional lymph node status (L)	Distant metastasis (M)
T- Tumour		0	Tis	N0	M0
T1	Tumour ≤ 2 cm	I	T1	N0	M0
T2	Tumour ≥ 2 cm but < 5 cm		T0	N1	M0
T3	Tumour ≥ 5 cm	IIA	T1	N1	M0
T4	Tumour of any size with direct extension to chest wall or skin		T2	N0	M0
N- Lymph node		IIB	T2	N1	M0
N0	No cancer in regional node		T3	N0	M0
N1	Regional movable metastasis	III A	T0	N2	M0
N2	Non-movable regional metastases		T1	N2	M0
N3	Cancer in the internal mammary lymph nodes		T2	N2	M0
M- Metastasis			T3	N1/N2	M0
M0	No distant metastases	III B	T4	Any N	M0
M1	Distant metastases	III C	Any T	N3	M0
		IV	Any T	Any N	M1

Criteria for staging breast tumours according to the UICC ICD-10 TNM classification.

*Size measurements are for the tumour's greatest dimension.



GSH PROTOCOL

SNLB: Identify at least 3 nodes if possible

- T1/T2 and selective T3 + clinically node negative
- Clinically node negative = Clinical + U/S

Contraindications to SLNB:

- Previous SLNB
- Histological/cytological proven mets
- Clinically palpable pathological nodes
- T4 cancers

Omission of axillary surgery: ALL CRITERIA

- >70 years old
- ER +
- Node negative
- T1/T2



Indications for ALNC:

- Proven positive LN biopsy preoperatively
- Clinical pathological LN's
- Contraindications to SLNB
- Failed SLNB
- Lack of access to SLNB technique
- Inadequate prior ANC - <6 nodes

Patient for breast surgery with no clinical or ultrasound suspicious lymph nodes (N0)

SLNB
(No intra-op frozen section)

SLNB positive for metastasis on final histology

SLNB negative for metastasis on final histology

Indication for breast RT
* BCT done
* 1 - 3 nodes positive and any one of:
- LVI
- Grade 3 tumour
- > 4cm in size
- ER negative tumour
- Extra capsular extension

No indication for breast RT

No axillary RT needed
Whole breast RT for BCT patients

Axilla only RT

No further axillary surgery
Include axilla in breast RT field

RESULTS

	ALND	ART
ARR	7/744 = 0.9%	11/681 = 1.6%
Ten year cumulative incidence	0.93%	1.82%
Total Deaths	Deaths = 104 (14.0%)	Deaths = 112 (16.4%)
Deaths 2nd BC	65 patients (8.7%)	70 patient (10.3%)
10 year OS	84.6%	81.4%
10 year DFS	75%	70.1%
Locoregional recurrence	25 patients (3.4%)	26 patients (3.8%)
10 year cumulative incidence	3.6%	4.1%
Distant progression	89 patients (12%)	99 patients (14.5%)
Secondary primary cancers	57 events	75 events
10 year cumulative incidence	8.3% 11 = contralateral breast cancer/DCIS (19%)	12.1% 21 = contralateral breast cancer/DCIS (28%)

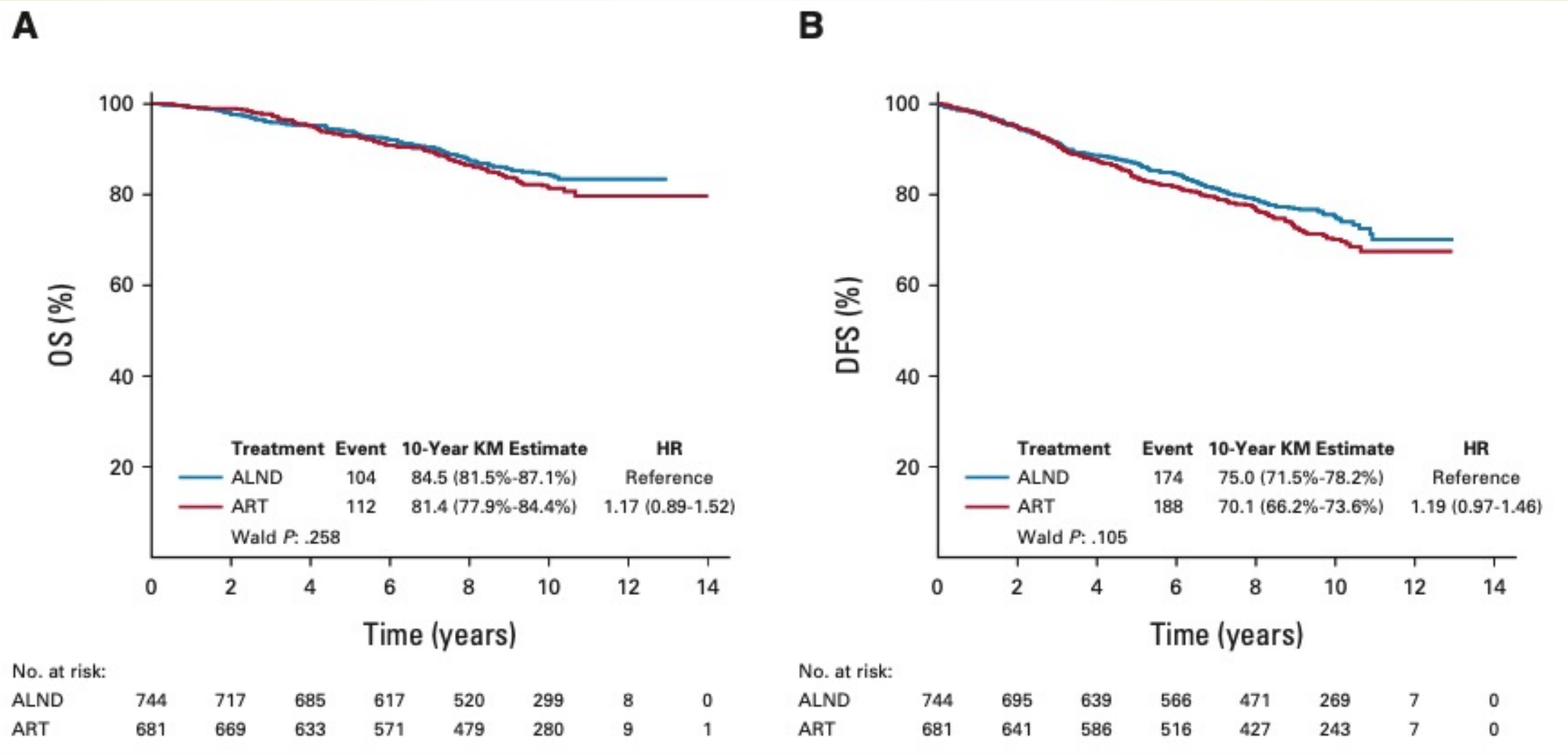


FIG 2. (A) OS and (B) DFS. ALND, axillary lymph node dissection; ART, axillary radiotherapy; DFS, disease-free survival; HR, hazard ratio; KM, Kaplan-Meier; OS, overall survival.



- ▶ **LYMPHOEDEMA:**

- ▶ 175 patients extra

- ▶ Observed and treated significantly more often in ALND with highest incidence at 1 year

- ▶ 42.2% of patients in ALND group

- ▶ 28.6% of patients in ART group



CONCLUSION

- ▶ Locoregional control similar in both groups
- ▶ Minimal difference on overall survival/Disease free survival
- ▶ Significant lower lymphoedema in the ART group
- ▶ No difference in Shoulder mobility/QOL
- ▶ The issue is – Incidence of secondary primary cancers which were significant in the ART group