

ASDP 62nd Annual Meeting

Primary Cutaneous Melanoma of the Female Breast: A Retrospective Study

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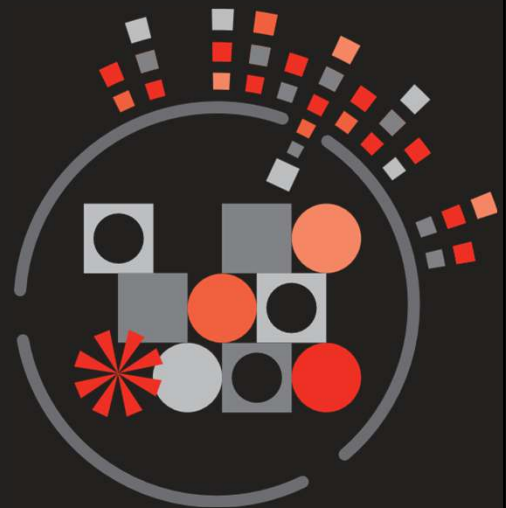
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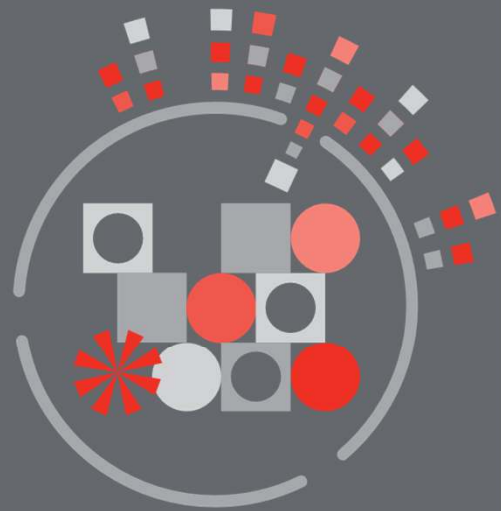


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Disclosures

- No financial relationships to disclose



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Melanocytic lesions of the breast skin



- Breast nevi:
 - Unique histologic features: overlapping with dysplastic nevi and melanoma
 - Histologic features: asymmetry, lentiginous pattern, lack of circumscription, suprabasal/ pagetoid melanocytes, cytologic atypia, dermal fibroplasia
 - No differences between men and women
 - No increased risk for melanoma

⁴
Rongioletti-2003, Elder-2006, Nicolau-2013

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Primary Cutaneous Melanomas of the Breast

- Rare; 0.28% to 3.8% of all cutaneous melanomas in both men and women
- Nipple melanomas: ~12%
- In women:
 - 0.92% of all cutaneous melanomas; incidence: 0.47 per 100,000 patient-years
 - More common in the upper half ($p < 0.01$)
 - More common in upper inner quadrant ($p = 0.05$)
 - May be attributed to sun-exposure
- Surgical management: Modified radical mastectomy + axillary dissection → Wide local excision + sentinel lymph node biopsy

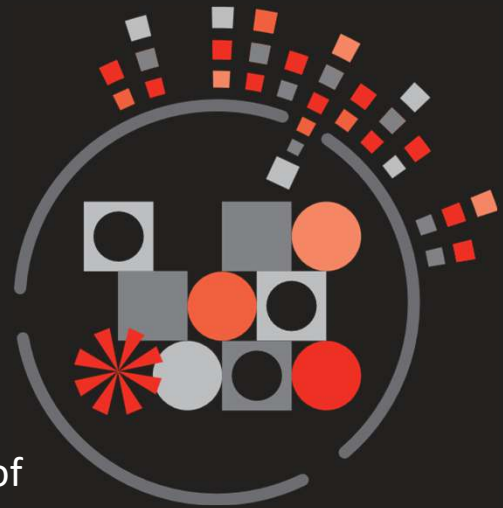
⁵ Ariel-1972, Greenberg-1987, Nagta-2018, Hines-2024, Bono-2003

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Objectives:

How do primary cutaneous melanomas of the female breast compare to other cutaneous melanomas?

What are the prognostic clinicopathological features in primary cutaneous melanomas of the female breast?



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Study design

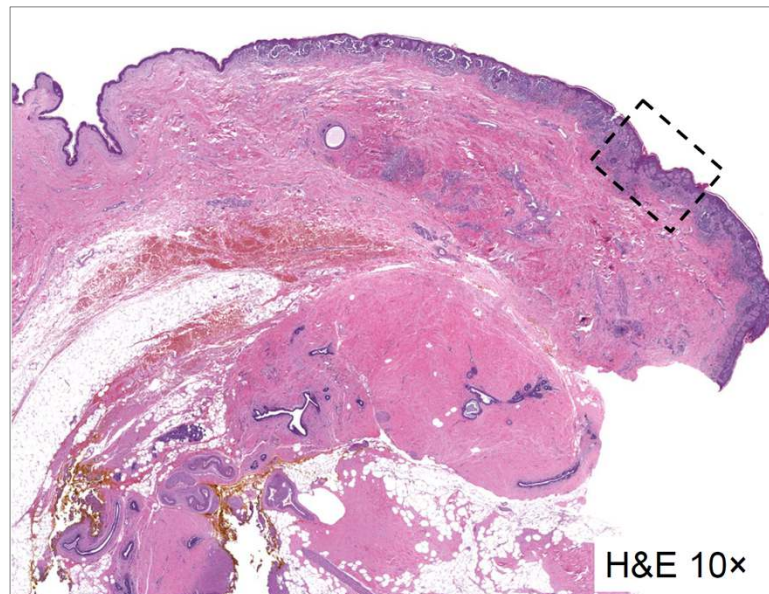
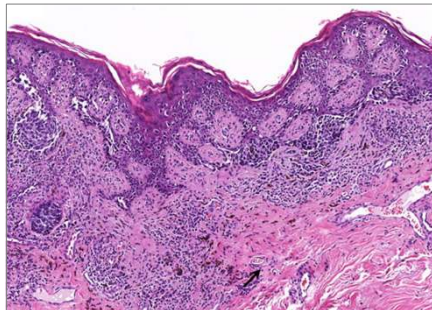


- Cases from the pathology archives of MDACC (n=105; # of Pts.=104) and MGH (n=32)
- Data collection
 - Demographic information: ethnicity, age at diagnosis
 - Clinical characteristics: presenting symptom(s), anatomic site
 - Histopathologic prognostic parameters of primary melanoma
 - Presence of lymph node and distant metastasis
 - Follow up: date of recurrence / metastasis (regional vs. distant), date of death if applicable, cause of death
- Statistical analysis
 - Univariate and multivariable Cox proportional hazards regression models: association between histopathologic and clinical characteristics and OS and DSS
 - Kaplan–Meier method: overall survival (OS) and disease-specific survival (DSS) curves

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Primary Cutaneous Breast Melanoma

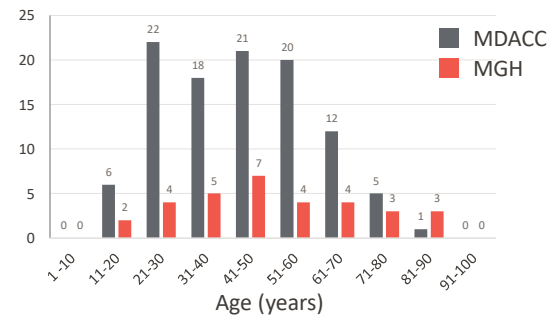


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Cohort Characteristics



MDACC only		n (%)
Ethnicity	White	101 (96.2%)
	Other	4 (3.8%)
Symptoms	Lesion	92 (87.6%)
	Discharge	2 (1.9%)
	Pain	1 (0.95%)
	N/A	10 (9.5%)



Ethnicity	HR (95% CI)	p-value
OS	0.16 (0.02-1.28)	0.084
DSS	0.06 (0.01-0.30)	<0.001

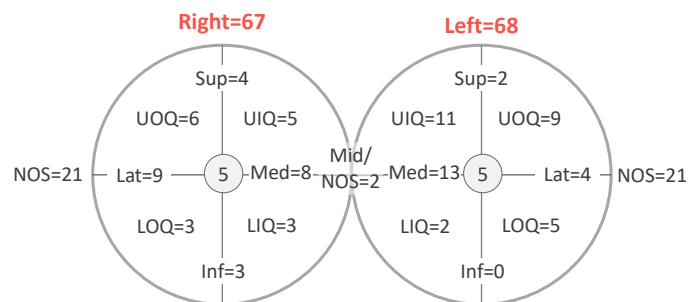
Range	15-87 years
Mean	45.09 years
Median	44 years

Age	HR (95% CI)	p-value
OS	1.06 (1.03-1.09)	< 0.001
DSS	1.06 (1.03-1.09)	0.003

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Anatomic Site



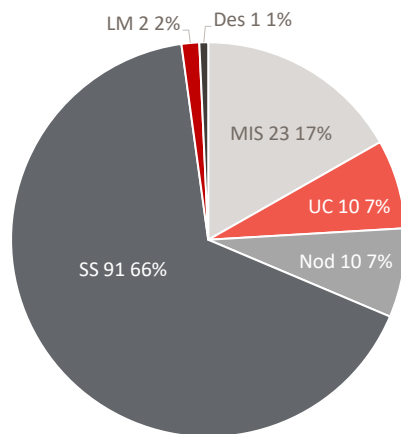
Anatomic location	Overall Survival		Disease Specific Survival	
	HR (95% CI)	p-value	HR (95% CI)	p-value
NAC vs. other	1.94 (0.49-7.51)	0.340	1.80 (0.31-10.60)	0.513
UIQ vs. other	0.58 (0.11-3.22)	0.534	0.89 (0.15-5.24)	0.900
Laterality	1.00 (0.43-2.34)	0.984	0.50 (0.16-1.14)	0.215

NAC: Nipple-areolar complex

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Histologic type

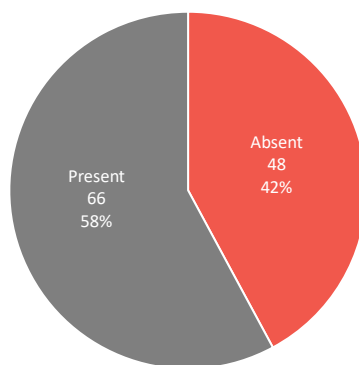


Invasive Melanoma Type	Overall Survival			Disease Specific Survival		
	HR	95% CI	p-value	HR	95% CI	p-value
UC vs. SS	3.00	0.87-10.38	<u>0.082</u>	4.59	1.19-17.67	0.027
Nod vs. SS	5.54	1.89-16.22	0.002	8.56	2.43-30.13	<0.001
LM vs. SS	2.63	0.13-54.75	0.532	3.48	0.15-79.56	0.435

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Vertical Growth Phase

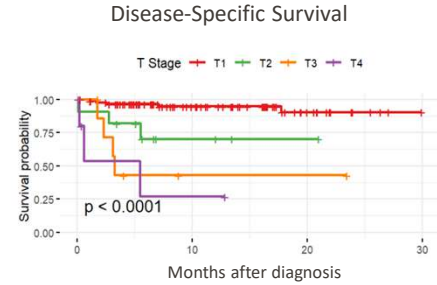
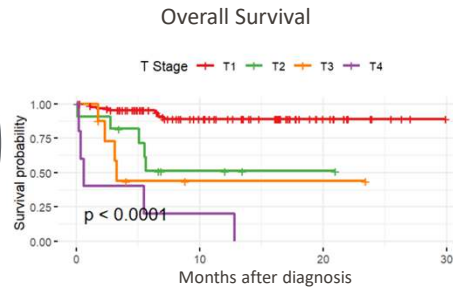
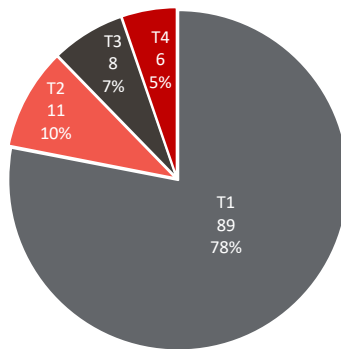


VGP	Overall Survival			Disease Specific Survival		
	HR	95% CI	p-value	HR	95% CI	p-value
Present	5.16	1.61-16.55	0.006	3.40	0.99-11.58	0.05

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Breslow Thickness

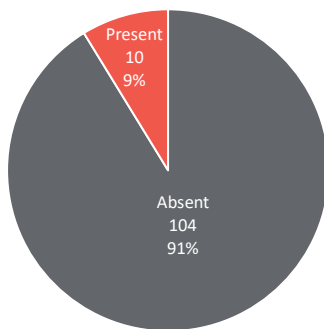


Breslow Thickness	n (%)	Overall Survival		Disease Specific Survival	
		HR (95% CI)	p-value	HR (95% CI)	p-value
0.1 to 1.0 mm (T1)	89 (78.1%)	-	-	-	-
1.1 to 2.0 mm (T2)	11 (9.7%)	5.71 (1.02, 31.91)	0.05	5.11 (0.45, 57.42)	0.05
2.1 to 4.0 mm (T3)	8 (7.0%)	8.25 (1.82, 37.37)	0.015	16.44 (2.70, 100.11)	0.013
> 4.0 mm (T4)	6 (5.2%)	38.19 (6.06, 240.89)	<0.001	66.51 (8.23, 537.36)	<0.001

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Ulceration

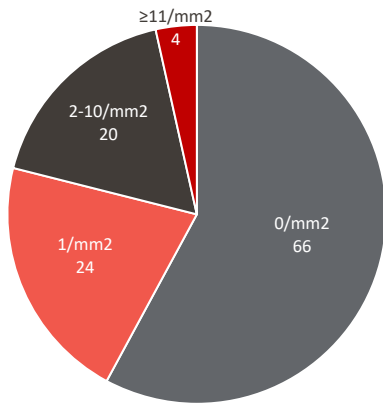


Ulceration	Overall Survival			Disease Specific Survival		
	HR	95% CI	p-value	HR	95% CI	p-value
Present	26.55	9.49-74.29	<0.001	27.78	8.56-90.12	<0.001

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Mitotic Rate



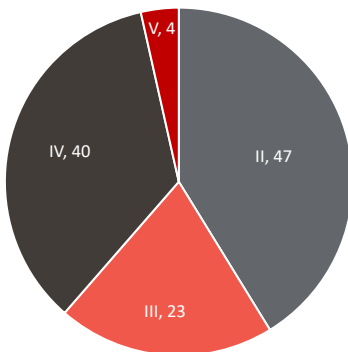
Mitotic Rate	Overall Survival			Disease Specific Survival		
	HR	95% CI	p-value	HR	95% CI	p-value
Present	1.11	1.07-1.15	<0.001	1.10	1.06-1.14	<0.001

Range: 0-41/mm²

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Clark level



Clark Level	Overall Survival			Disease Specific Survival		
	HR	95% CI	p-value	HR	95% CI	p-value
II	-	-	-	-	-	-
III	2.34	0.31-17.65	0.409	2.74	0.09-88.182	0.570
IV	6.94	1.16-41.38	0.033	16.52	0.76-360.81	<u>0.075</u>
V	36.25	4.73-277.82	<0.001	51.03	1.55-1678.35	0.027

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Lymphovascular & Perineural Invasion



*	Overall Survival			Disease Specific Survival		
	HR	95% CI	p-value	HR	95% CI	p-value
LVI	10.23	2.27-37.75	<0.001	17.64	4.56-68.14	<0.001
PNI	11.09	2.83-43.47	<0.001	10.10	1.75-58.32	0.009

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Tumor-Infiltrating Lymphocytes & Regression



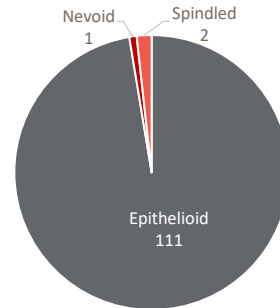
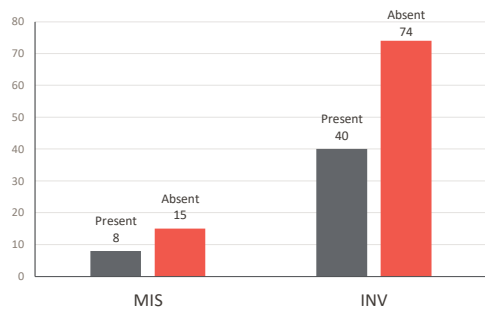
*	Overall Survival			Disease Specific Survival		
	HR	95% CI	p-value	HR	95% CI	p-value
Regression	0.97	0.38-2.47	0.944	0.67	0.20-2.28	0.526
TIL NB vs. Abs	0.626	0.03-12.18	0.757	0.503	0.03-10.11	0.654
TIL Br vs. Abs	<u>0.089</u>	0.00-5.50	0.250	0.348	0.01-10.46	0.543

NB: non-brisk; Br: brisk

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Precursor Nevus & Cytology

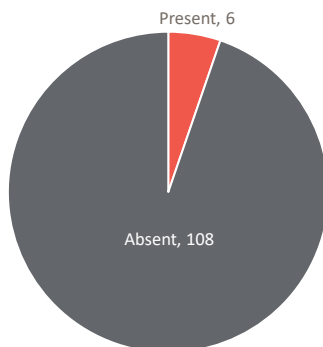


*	Overall Survival			Disease Specific Survival		
	HR	95% CI	p-value	HR	95% CI	p-value
Nevus	1.04	0.44-2.45	0.935	1.04	0.45-2.39	0.925
Epithelioid vs. Spindled	0.25	0.046-1.37	0.110	0.56	0.03-10.39	0.697
Epithelioid vs. Nevoid	0.01	0.00-0.14	<0.001	0.56	0.03-10.39	0.697

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Microscopic Satellitosis



Microsatellitosis	Overall Survival			Disease Specific Survival		
	HR	95% CI	p-value	HR	95% CI	p-value
Present	17.83	5.95-53.46	<0.001	19.17	6.63-55.48	<0.001

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AJCC T-category system

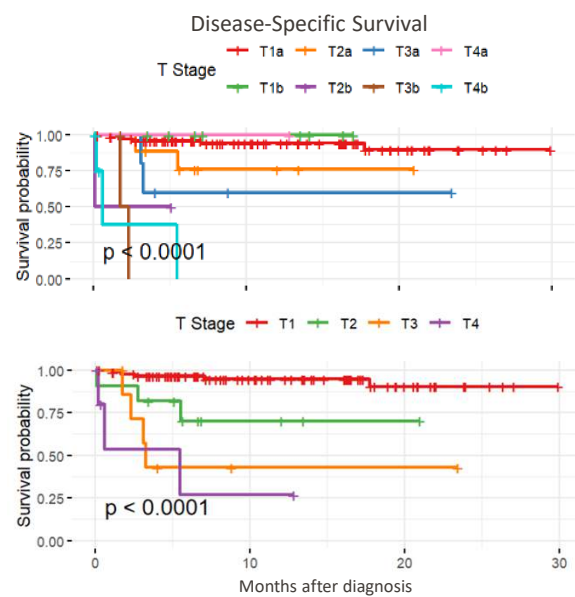
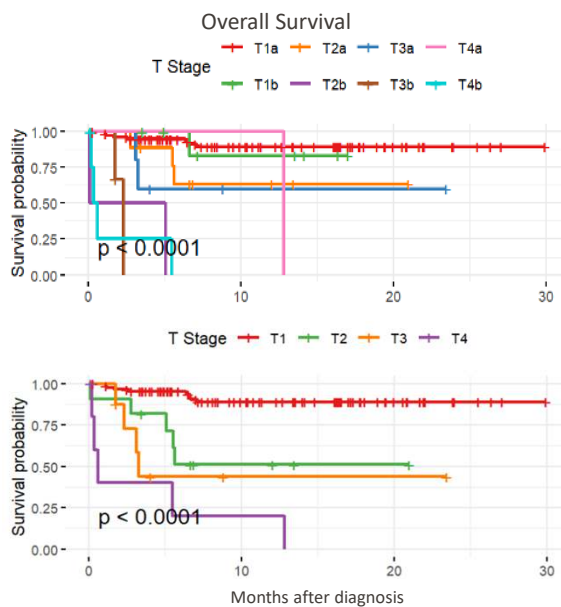


T-Category	n	Overall Survival			Disease Specific Survival		
		HR	95% CI	p-value	HR	95% CI	p-value
T1a	80	-	-	-	-	-	-
T1b	9	1.87	0.28-12.43	0.518	0.98	0.04-26.13	0.994
T2a	9	4.57	1.15-18.09	0.030	4.47	0.83-24.16	<u>0.082</u>
T2b	2	53.36	10.05-283.23	<0.001	34.34	4.12-286.59	0.001
T3a	5	7.08	1.49-33.50	0.014	8.44	1.58-45.18	0.013
T3b	3	38.18	6.51-223.81	<0.001	47.13	6.97-318.91	<0.001
T4a	1	11.65	1.74-78.11	0.011	6.82	0.26-182.22	0.252
T4b	5	65.02	15.91-265.77	<0.001	54.33	10.75-274.58	<0.001

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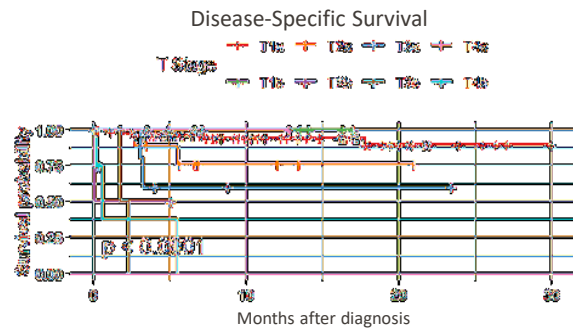
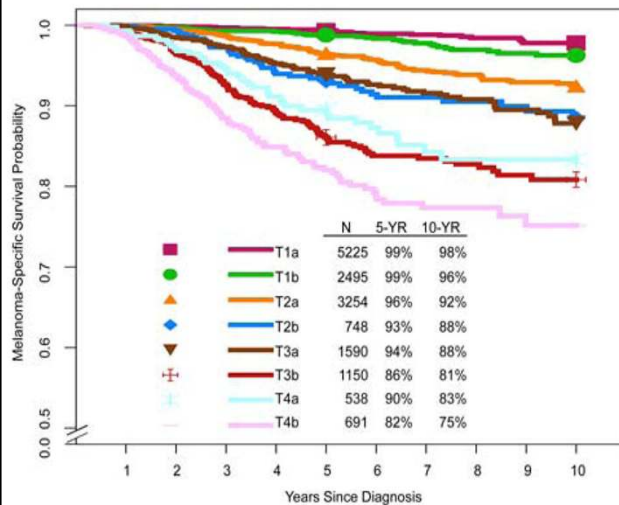
AJCC T-category system



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AJCC T-category system



Ulceration in T2 to T4 melanomas - shorter survival

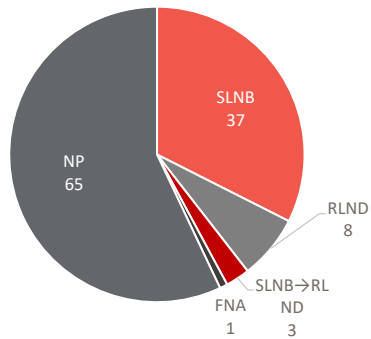
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Gershenwald-2017

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Surgical management & Margin status

	MIS (n=23)	Inv MM (n=114)
WLE	22	106
RM	0	1
MRM	0	2
UK/NP/NA	1	5

Margin	Overall Survival			Disease Specific Survival		
	HR	95% CI	p-value	HR	95% CI	p-value
+ve for Inv MM (n=1)	0.07	0.01-0.39	0.003	0.05	0.001-0.32	0.001



RM: radical mastectomy
MRM: modified radical mastectomy
SLNB: sentinel lymph node biopsy
RLND: regional lymph node dissection

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Multivariable Analysis: OS and DSS



	Parameter	p-value	HR	95% CI
Overall Survival	Ulceration	<0.001	11.2	3.58-35.13
	Age	0.003	1.04	1.01-1.07
Disease-Specific Survival	Age	0.039	1.05	1.002-1.10
	Race	0.001	0.05	0.01-0.28
	Mitotic figures	0.020	1.10	1.02-1.19
	Ulceration	0.010	11.64	1.82-74.36
	Microsatellitosis	0.030	0.06	0.01-0.76
	Surgical margins	0.003	0.01	0.00-0.19

Breslow thickness did not correlate with survival

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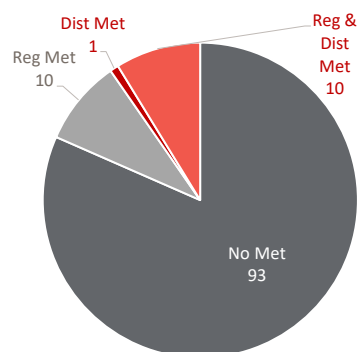
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Follow-up



Median follow-up: 9.2 years

Survival	1 year	3 year	5 year	10 year	Median
OS	96%	90%	89%	82%	Not reached
DSS	97%	92%	91%	88%	Not reached



Patients with **distant metastasis** died due to disease

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Correlation with Survival



Univariate analysis	Overall Survival			Disease-specific survival		
	HR	95% CI	p-value	HR	95% CI	p-value
Any metastasis	11.59	4.98-26.96	<0.001	50.31	12.20-207.48	<0.001
Satellitosis	17.83	5.95-53.46	<0.001	19.17	6.63-55.48	<0.001
Regional metastasis	9.96	4.32-22.96	<0.001	33.78	9.75-117.00	<0.001
Distant metastasis	24.65	9.95-61.06	<0.001	68.19	18.89-246.23	<0.001

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Summary



- Primary cutaneous melanomas of breast skin in women are mostly similar to other primary cutaneous melanomas
- Ulceration may be more prognostically significant than Breslow thickness
- Distant metastasis correlated with shorter survival
- Studies using larger cohorts with longer follow-up are necessary

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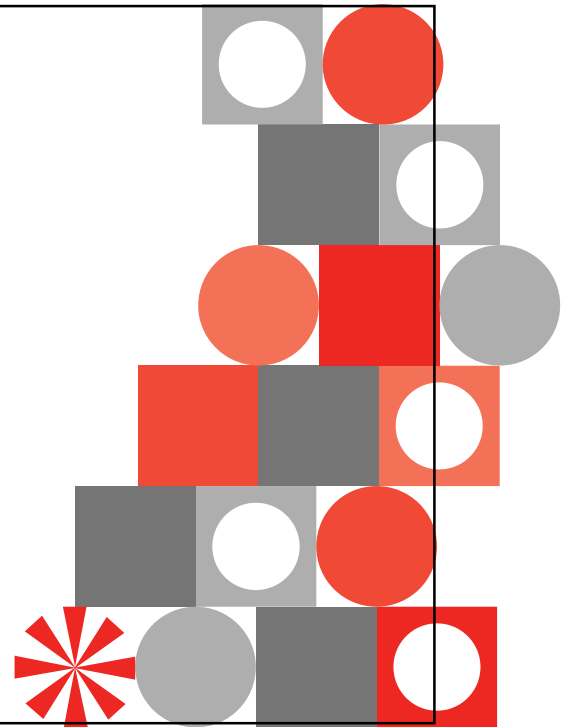
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Thank you!

Questions?

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