

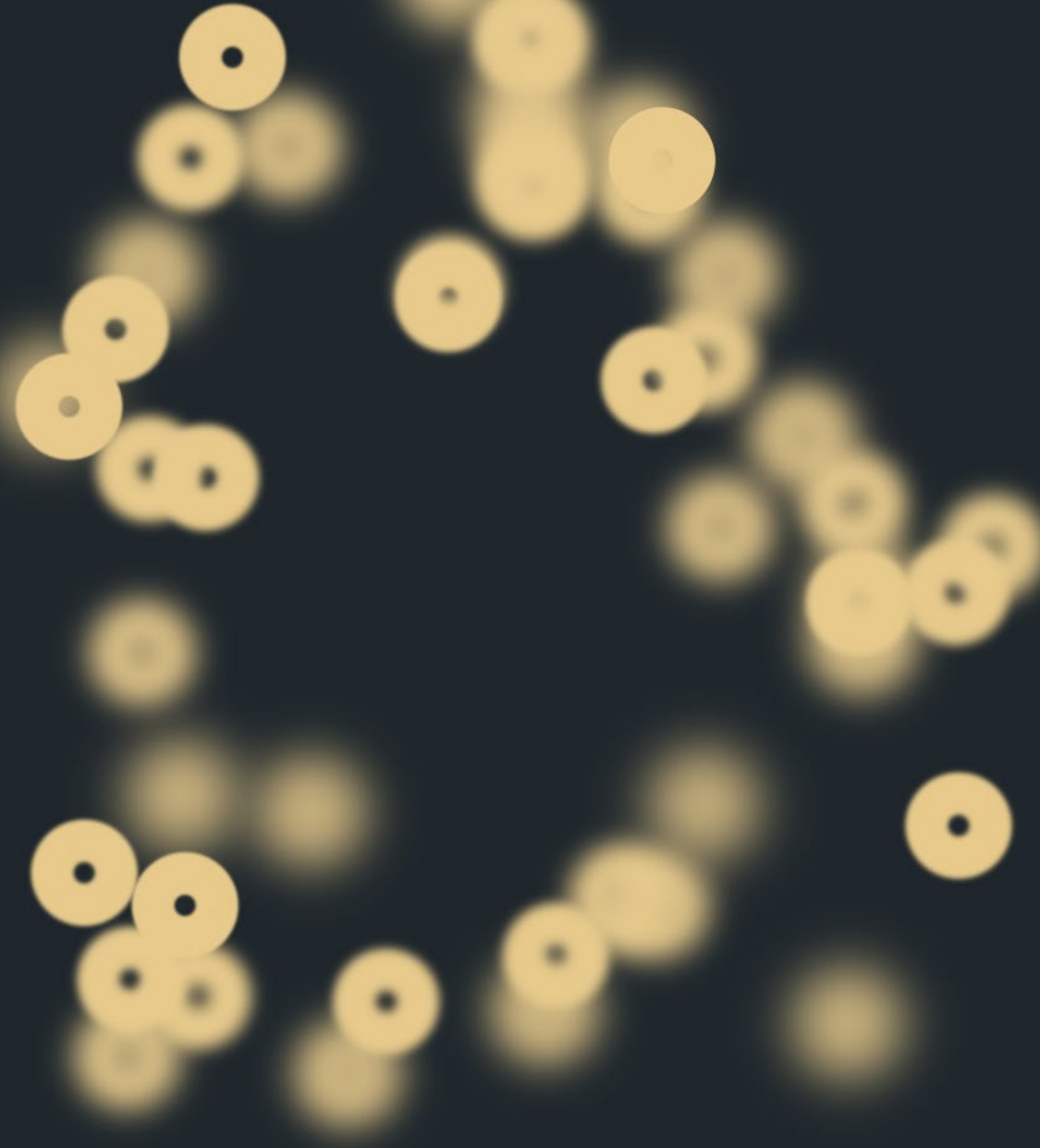


Cartography of Clinical and Molecular Features of Therapy-Related Myeloid Neoplasms: Insights from the Italian Registry

Elisa Meddi, MD

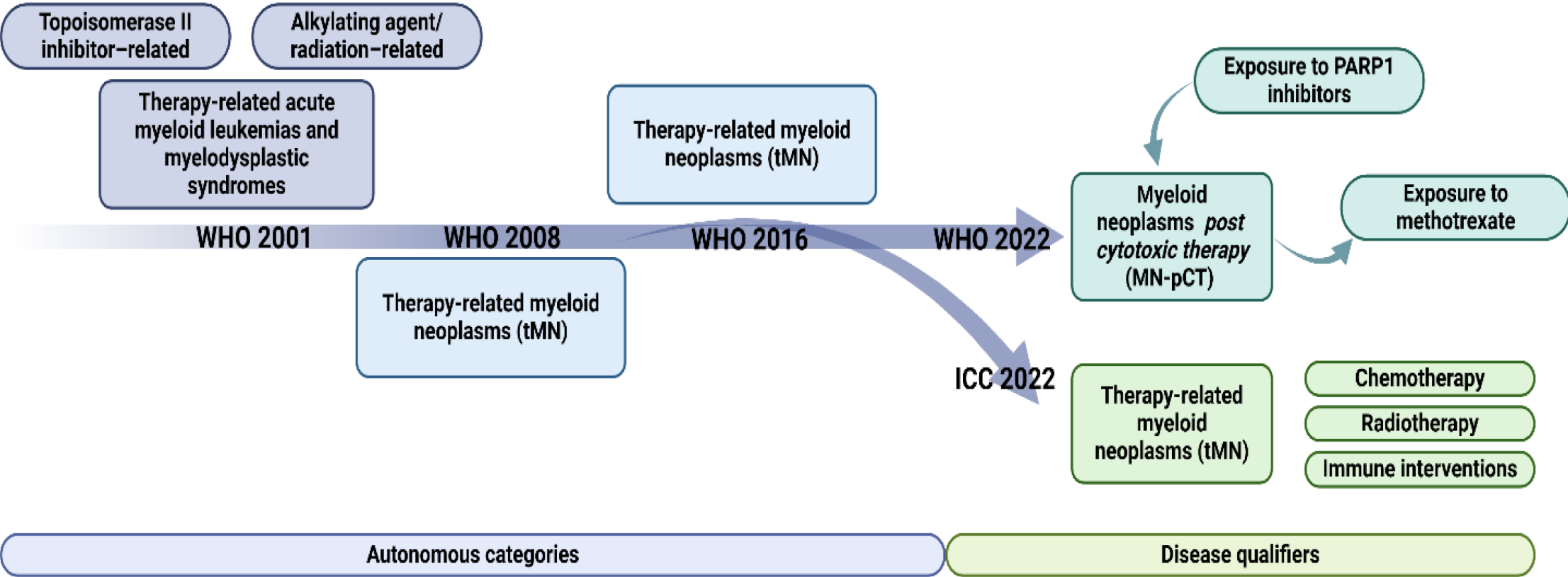
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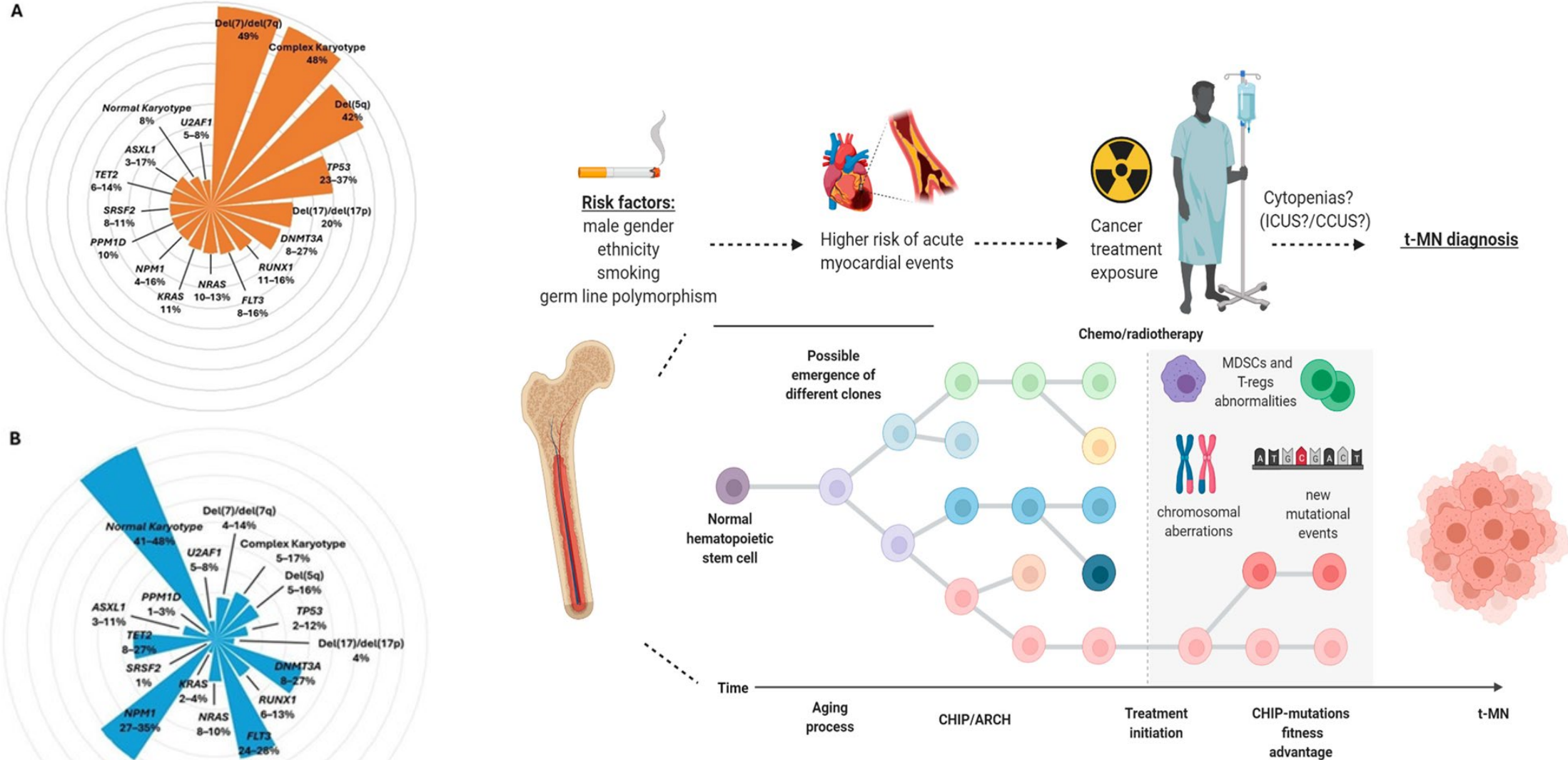


Therapy-related Myeloid Neoplasms (t-MNs): Background

Serena Travaglini et al., Biomedicines 2024



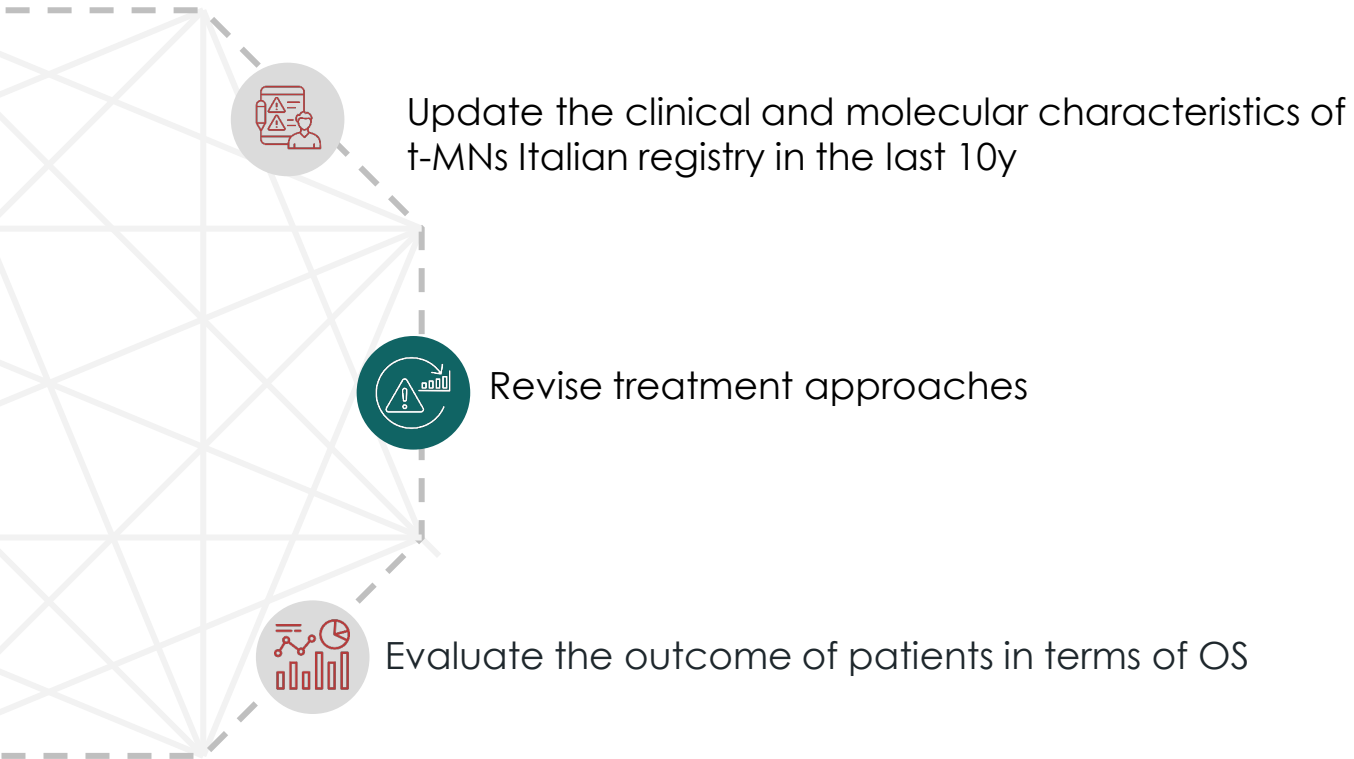
Therapy-related Myeloid Neoplasms (t-MNs): Background



Serena Travaglini et al., Biomedicines 2024

Gurnari et al., Biology 2021

Study design



Results: Demographics

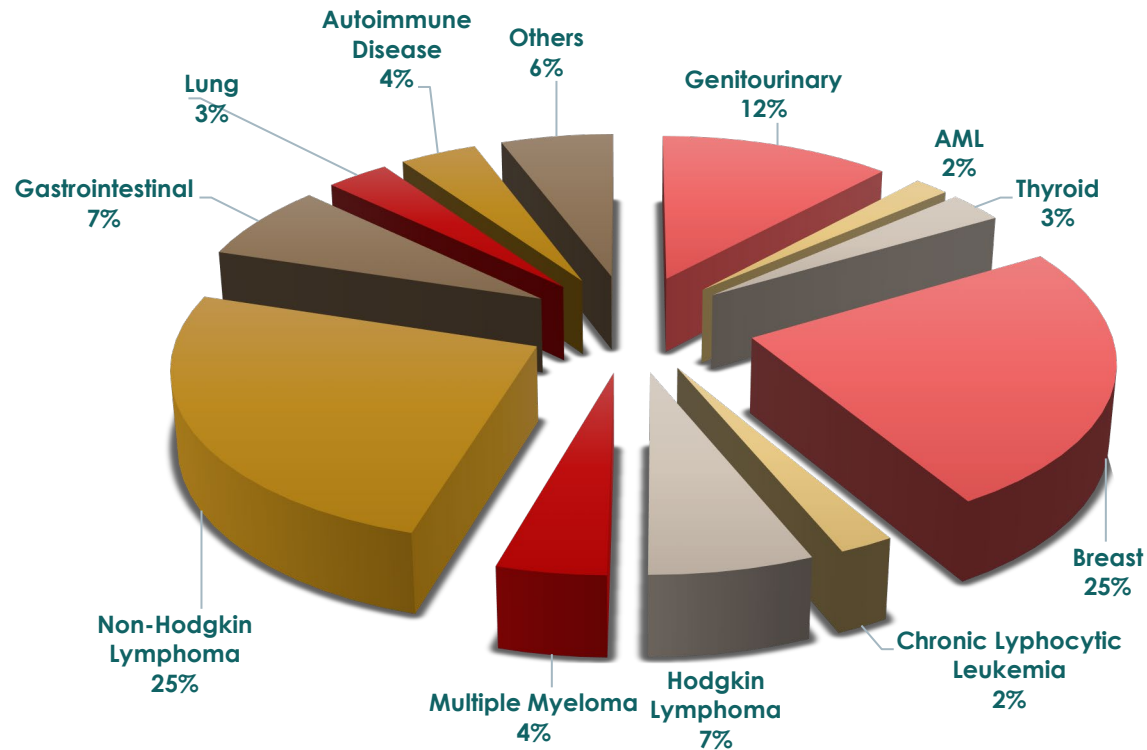
- ❖ 488 t-MNs patients between 2014-2024
- ❖ Latency period between PM and t-MNs: 60 months [IQR 24-120]

Characteristics		N (%)	Haematological	Non-haematological	P-value
Overall		488 (100%)	182 (37%)	306 (63%)	<0.001
Age at t-MNs diagnosis	≤60 y	96 (20%)	34 (19%)	62 (20%)	0.76
	>60 y	392 (80%)	148 (81%)	244 (80%)	
Sex	Male	244 (50%)	119 (65%)	125 (41%)	<0.001
	Female	244 (50%)	63 (35%)	181 (59%)	
Bone Marrow blasts	≤19%	214 (46%)	90 (51%)	124 (43%)	0.16
	>19%	250 (54%)	88 (49%)	162 (57%)	

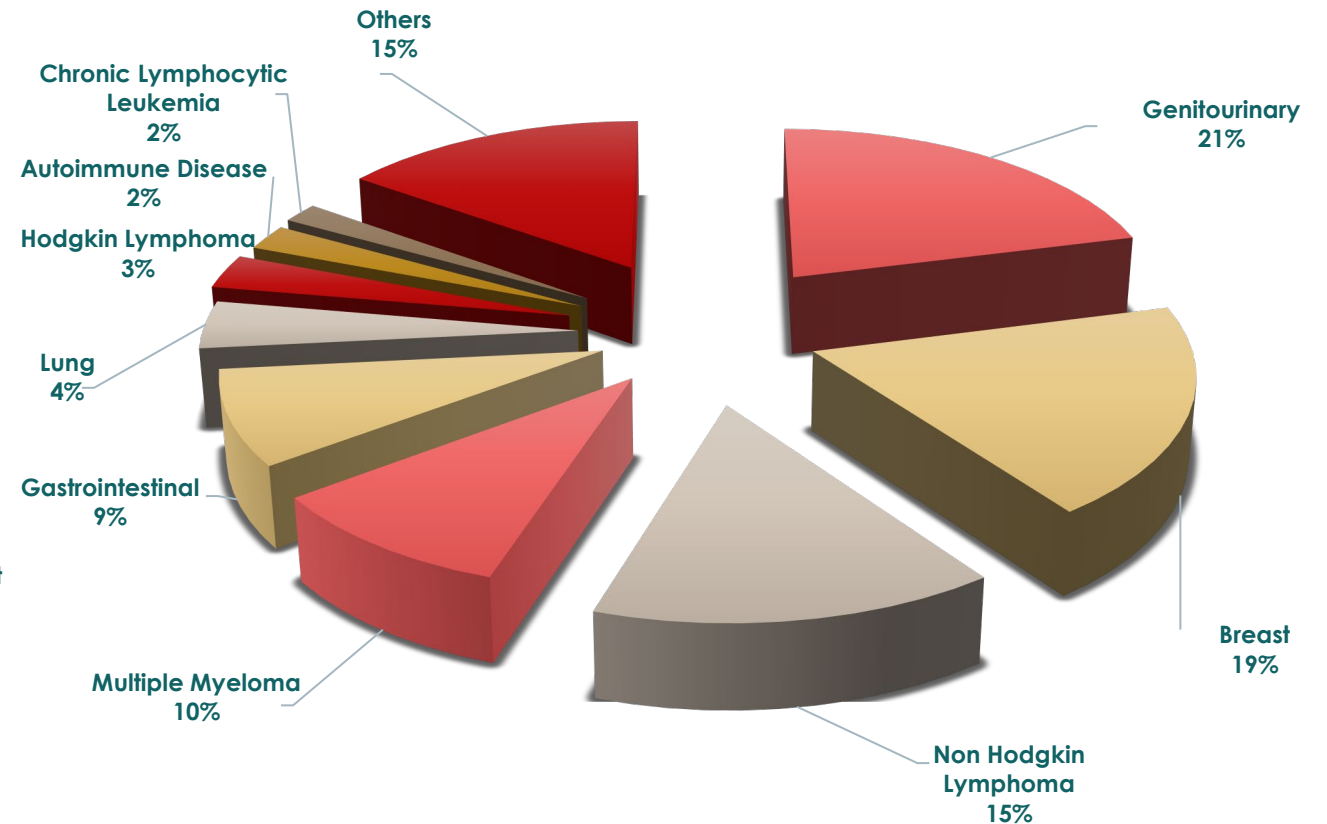
Results: primary cancer type (PCT)



1999-2013 (n=277)



2014-2024 (n=488)



Fianchi et al., American Journal of Hematology 2015

Results: PCT treatments

- ❖ 74% received prior chemotherapy
- ❖ 40% received prior radiotherapy

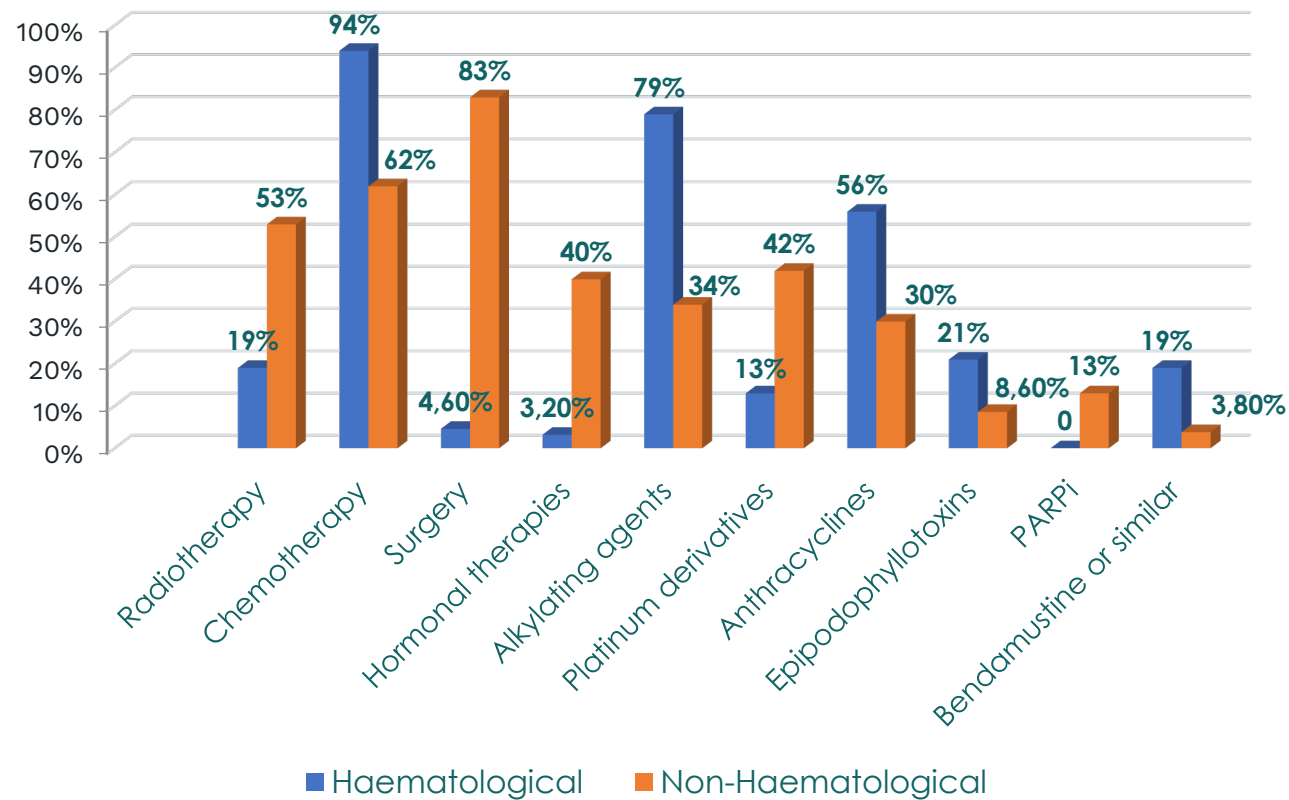


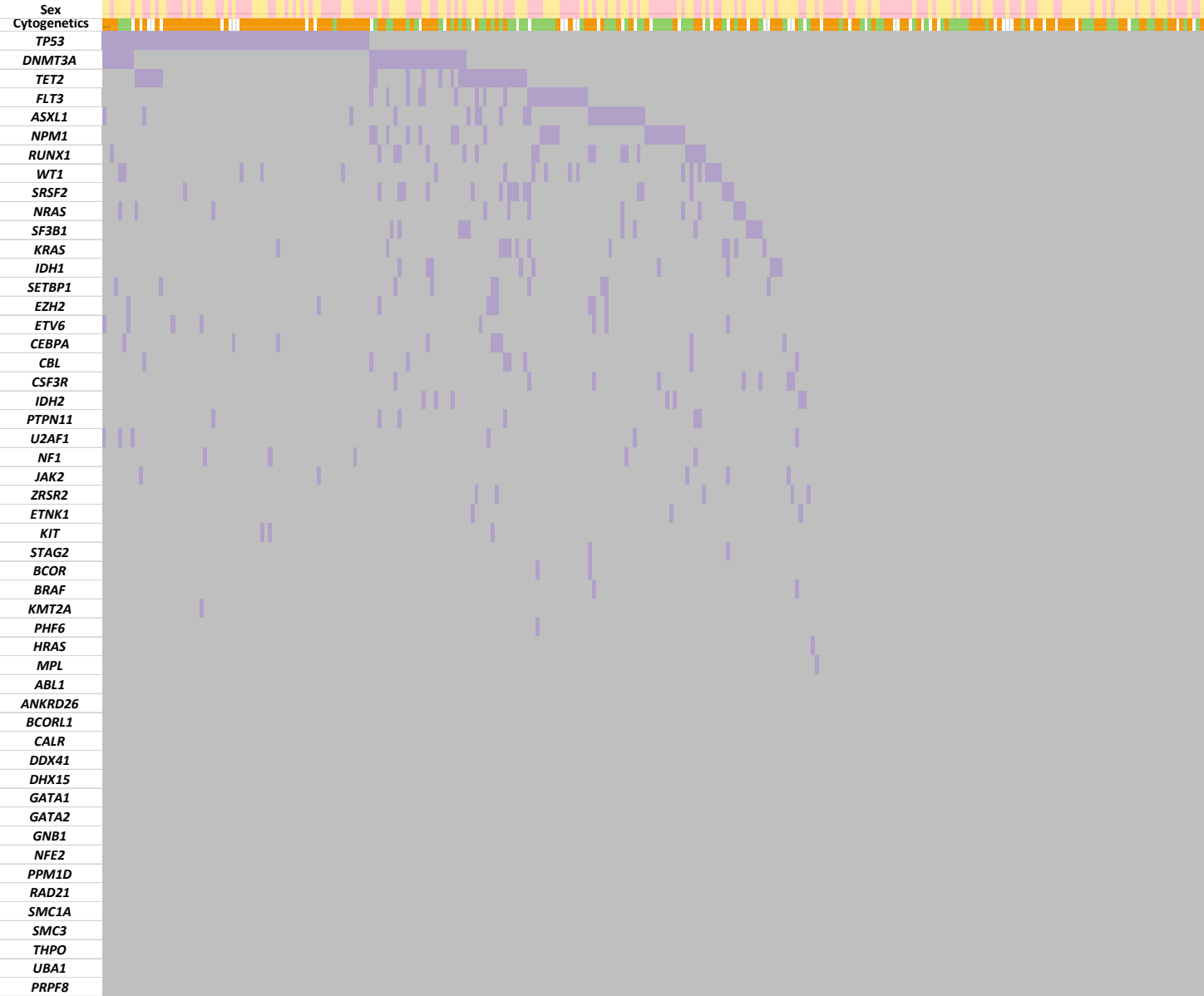
TABLE I. Clinical Characteristics of 277 t-MN Patients

Patient characteristics	Retrospective series (n = 104)	Prospective series (n = 173)	P-values
Median age (years)	64 (27–83)	64 (21–87)	0.28
Sex (M/F)	44/60	73/100	1.0
Type of t-MN			0.3
AML (BM blasts, ≥20%)	63	94	
MDS	41	79	
PD			0.11
Lymphoproliferative diseases	35	71	
Breast	31	38	
Genitourinary	12	21	
Gastrointestinal	4	16	
Thyroid	4	4	
Lung	4	5	
Other solid tumor	4	12	
Acute leukaemia	2	3	
Autoimmune disease	8	3	
Treatment of PDs			0.41
CHT	45	89	
RT	18	25	
Combined	41	59	
Median latency between primary therapy and t-MN diagnosis (years)	5.0 (0.5–32)	6.0 (0.7–48)	0.13
Karyotype (n = 212)			0.05
Normal	28	48	
Isolated chromosome 7 abnorm.	6	16	
Complex	12	40	
Balanced translocation ^a	6	4	
t(15;17)	9	7	
Other abnormalities	16	20	
Median follow-up (months)	29.8 ± 3	12.9 ± 1	0.0001

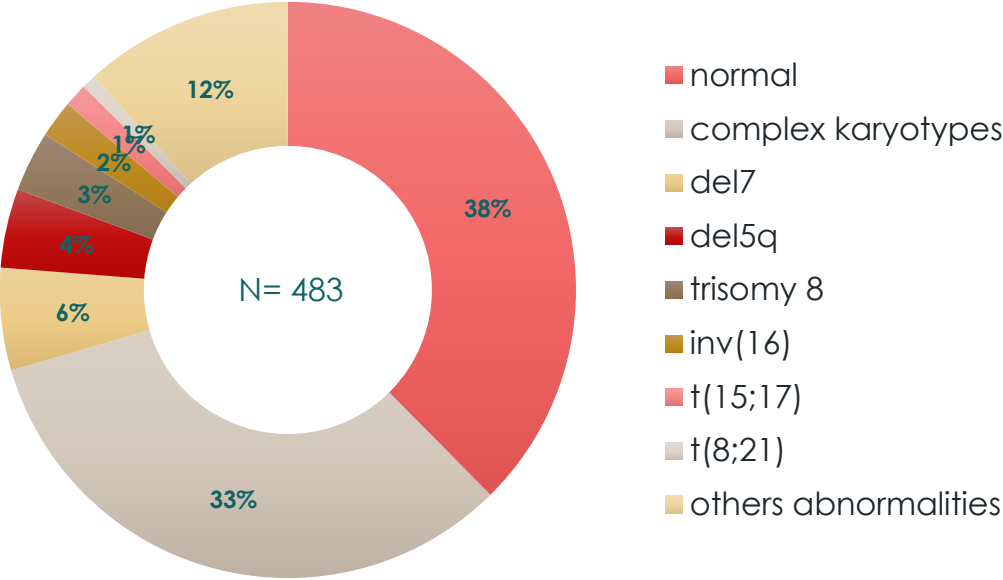
^a t(9;11): 2 cases; t(11;16): 1; t(4;11): 1; t(9;16): 1; t(8;21): 3; t(3;8): 1; t(16;x).

Fianchi et al., American Journal of Hematology 2015

Results: karyotype and molecular features of t-MNs

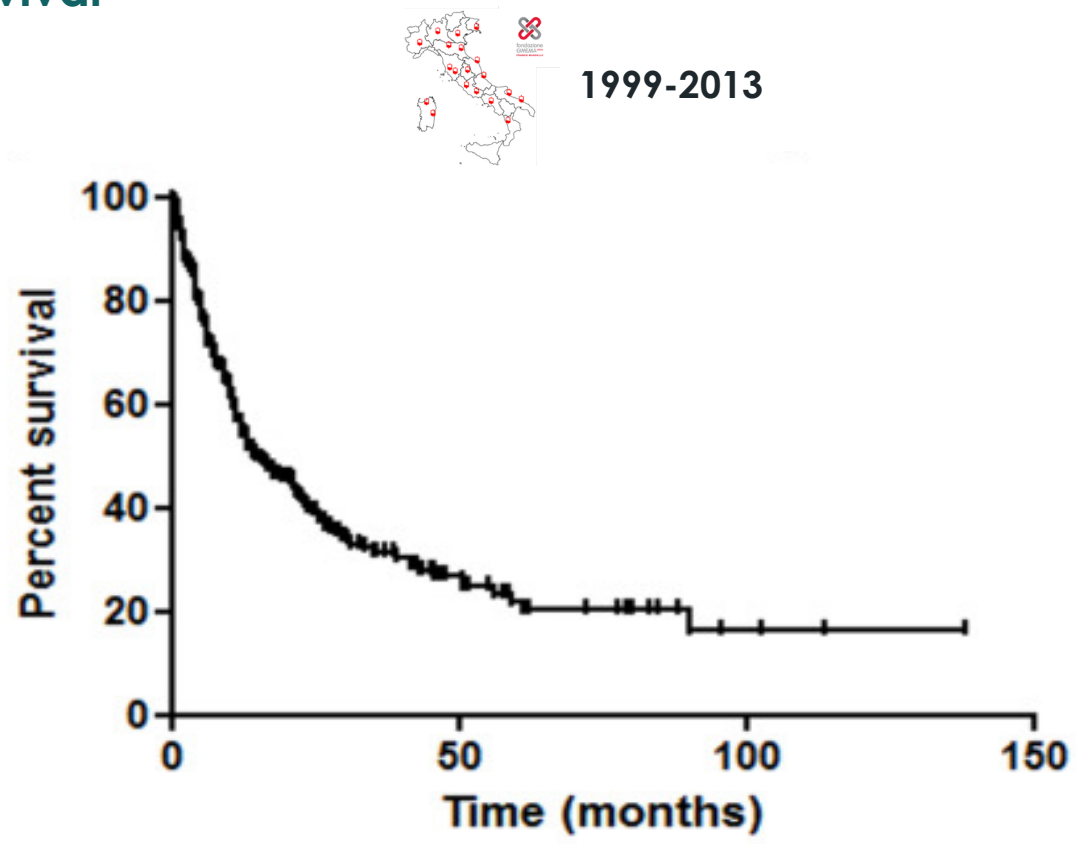
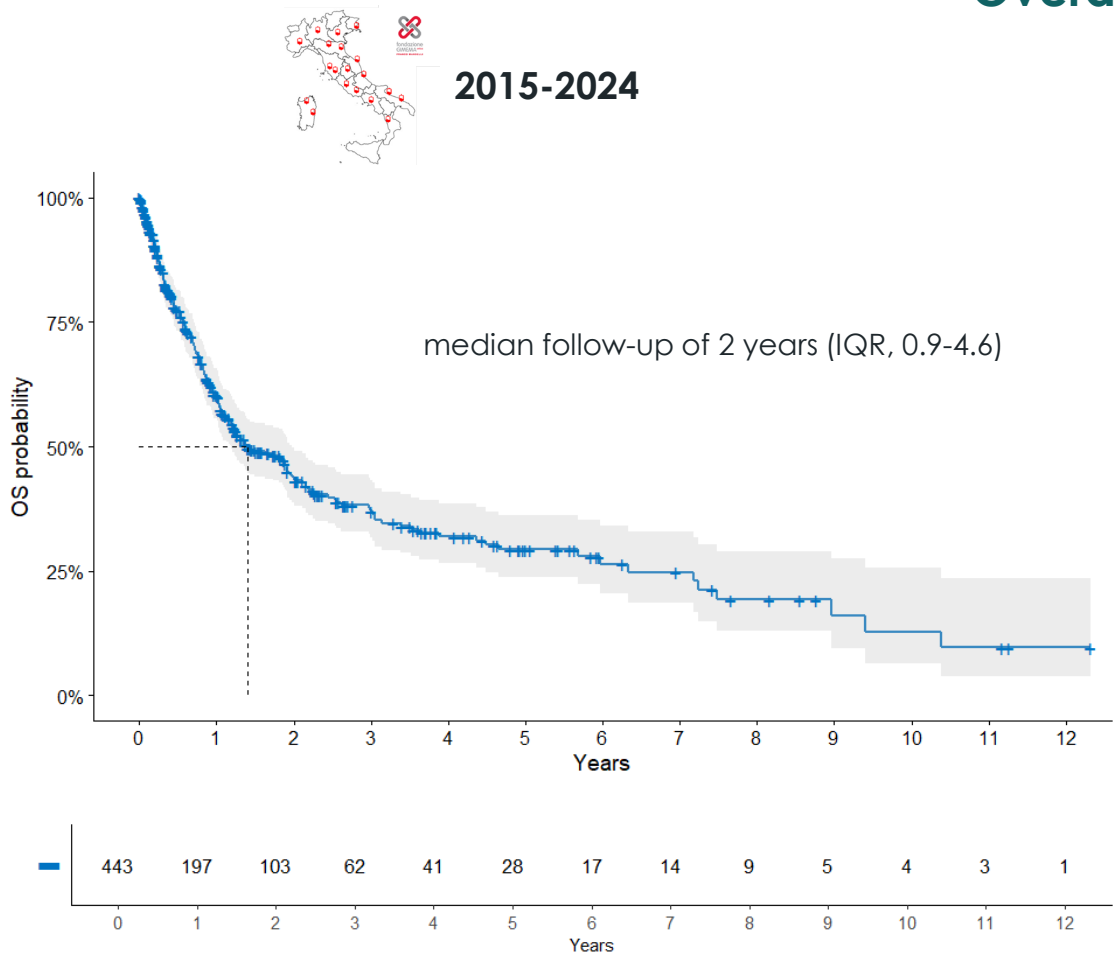


Cytogenetics



Results: Outcomes

Overall Survival



Fianchi et al., American Journal of Hematology 2015

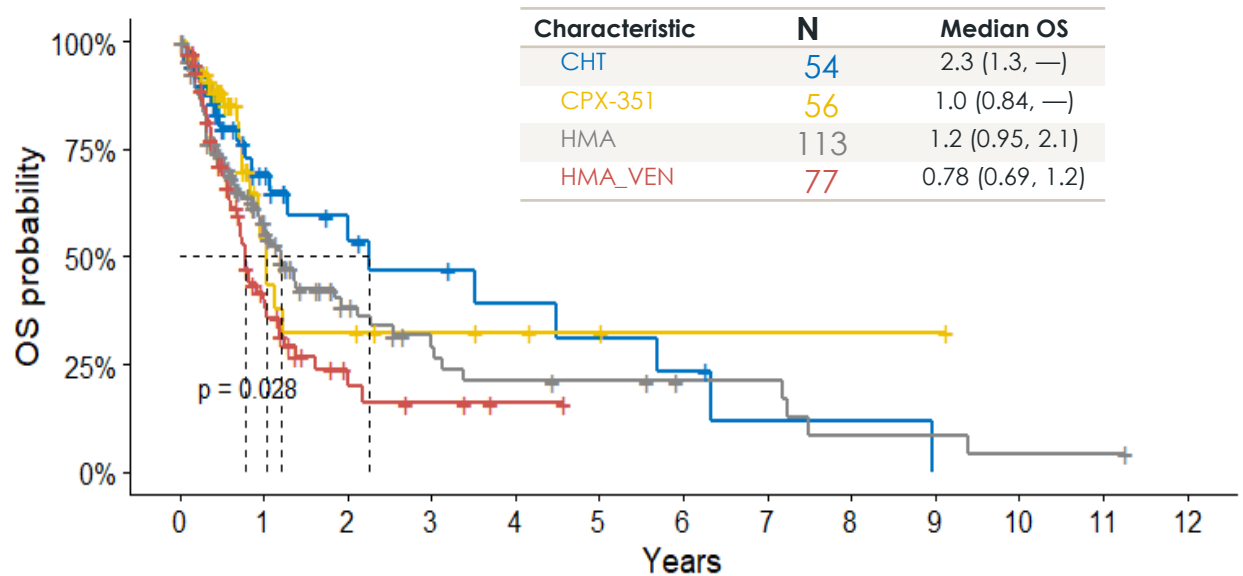
Characteristic	2 Years	3 Years
Overall	44% (38%, 49%)	37% (32%, 43%)

Results: treatment of t-MNs and OS



2015-2024 (HCT censoring)

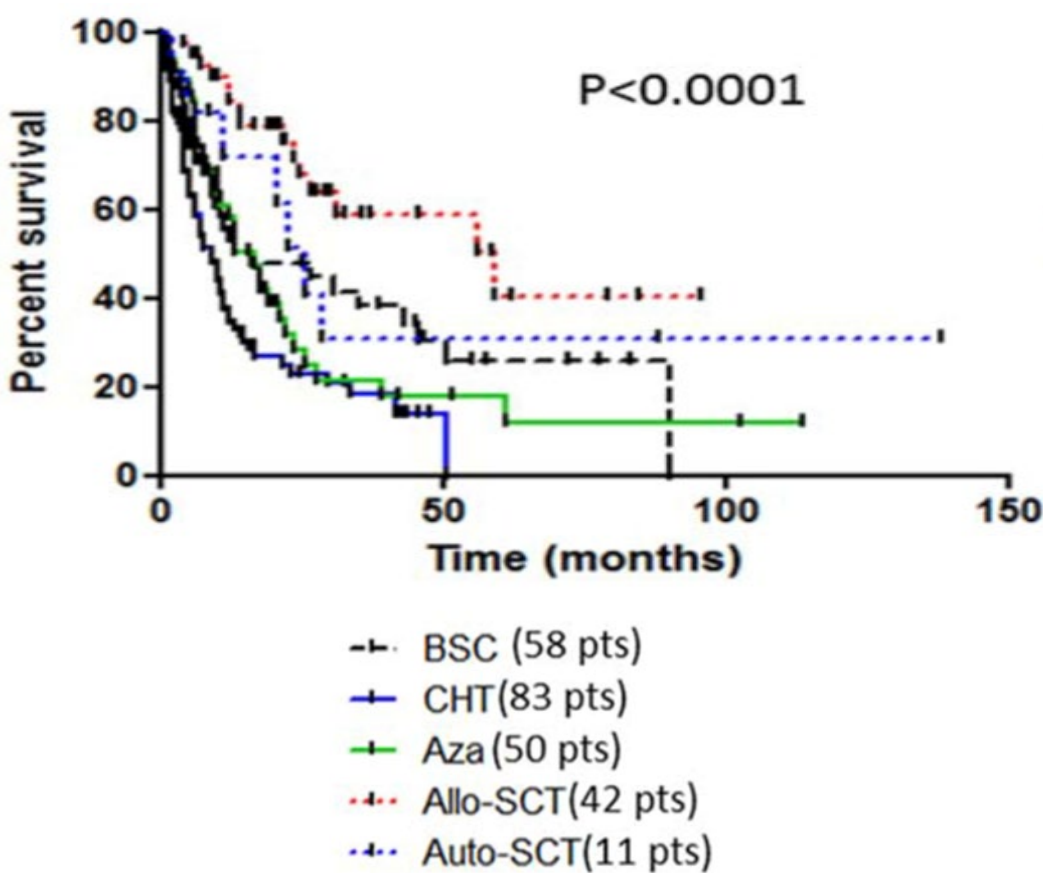
CHT CPX-351 HMA HMA_VEN



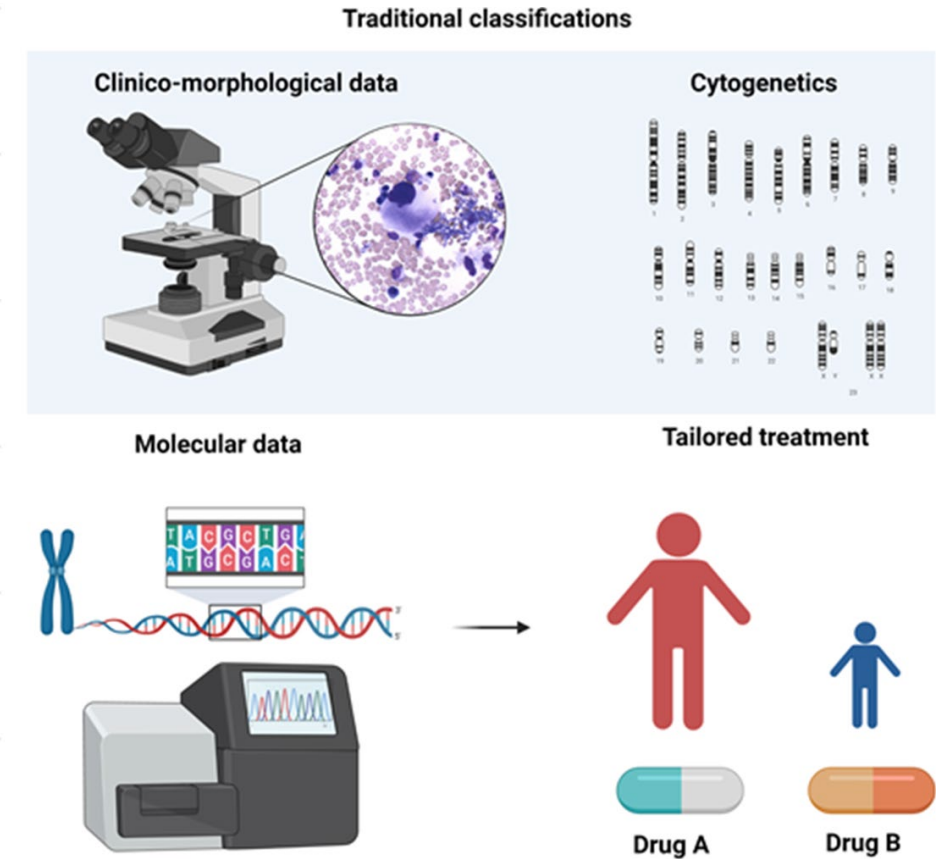
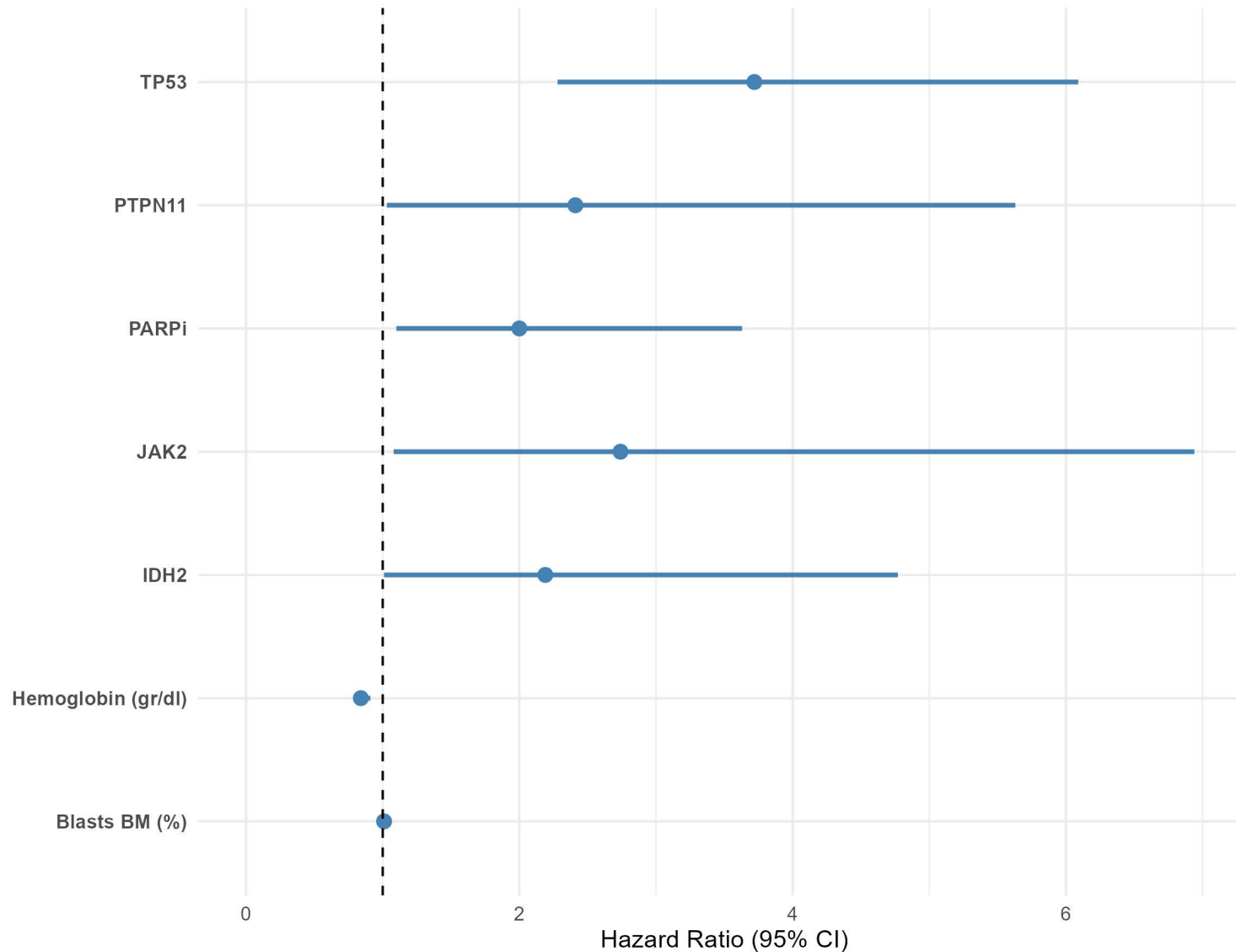
Characteristic	2 Years	3 Years
CHT	54% (37%, 78%)	47% (30%, 74%)
CPX-351	32% (17%, 61%)	32% (17%, 61%)
HMA	38% (29%, 51%)	29% (19%, 43%)
HMA_VEN	24% (14%, 40%)	16% (7.5%, 34%)



1999-2013



Results: clinico-molecular features impacting outcomes



Voso and Gurnari ASH 2021

Conclusions



Our study provides an updated cartography of t-MNs, confirming a reduction in the prevalence of lymphoproliferative diseases as primary tumors (30% vs 41%), an increase of GU tumors (29% vs 21%), and a reduction in t-MN following autoimmune diseases (2% vs 8%), as compared to the prior Italian Network report



Exposure to PARP inhibitors is associated with increased risk



Management of t-MN is still an unmet medical need. Prognosis continues to be dismal, even among those who have received allo-HCT



Advancements in our comprehension of the molecular mechanisms associated with t-MN could pave the way for effective strategies aimed at preventing its onset and aiding in the management of this complication

Thanks for the attention

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