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RETROSPECTIVE ANALYSIS OF **EARLY MORTALITY** IN A COHORT OF PATIENTS WITH ACUTE PROMYELOCYTIC LEUKEMIA

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Objective and Methods



- Objective: Compare characteristics between patients who died and survived induction chemotherapy.
- Methods:
 - Data of newly diagnosed APL patients from **January 2009 to February 2017** in one center → Total of **63 patients**
 - Sanz score was used to divide patients into risk groups
 - Treatment protocol in our institution consists of **AIDA protocol**

Results



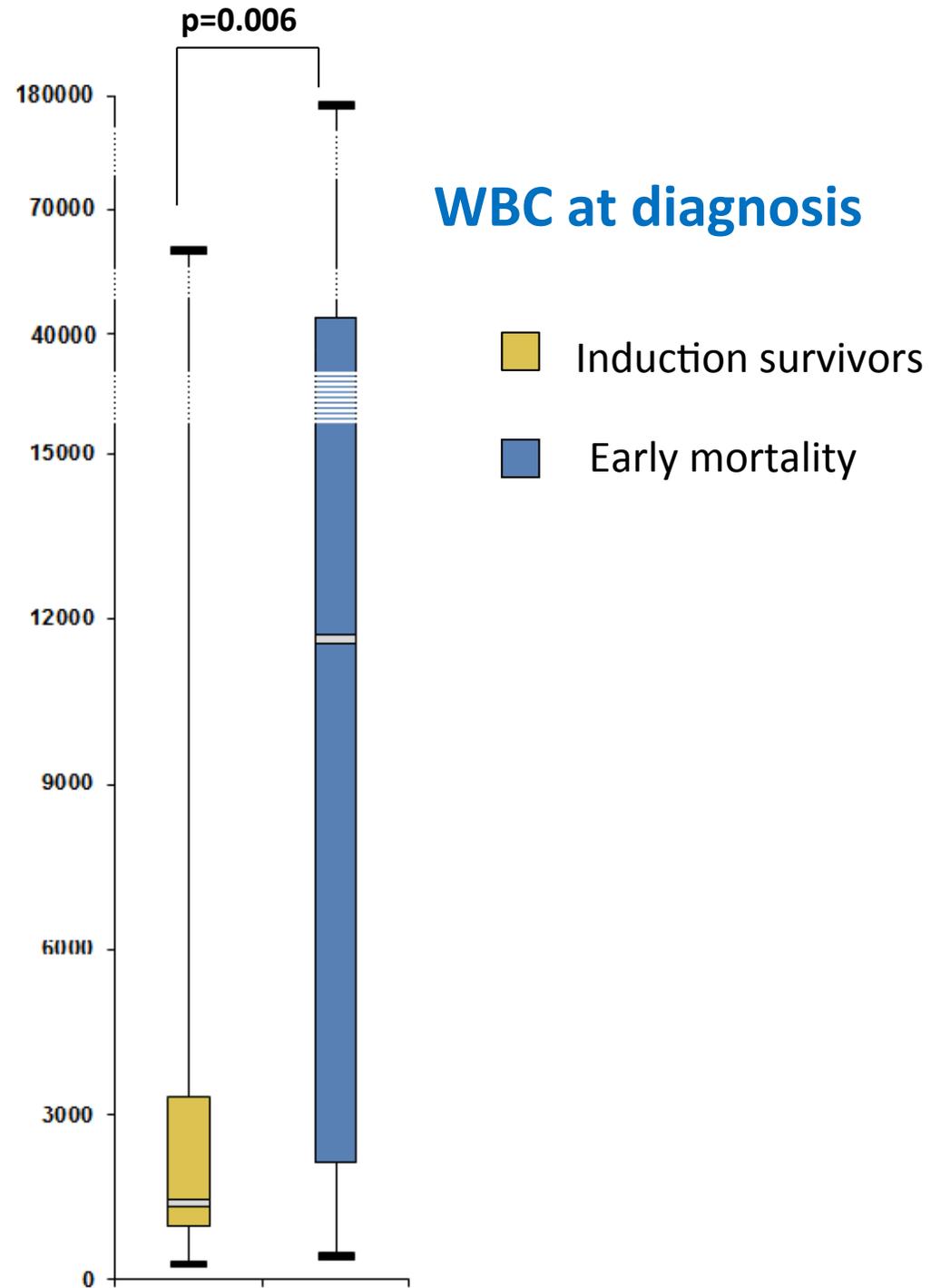
- Median follow-up of 66 months and **71% overall survival**
- Thirteen (**21%**) patients **died before induction was completed:**
 - **8** from CNS vascular events (5 hemorrhagic)
 - **5** from infection
- **All** induction survivors achieved **complete remission** in the end of induction treatment- **26%** with **molecular remission**
- 4 deaths occurred after induction: 2 from CNS events (1 hemorrhagic), 1 from infection and 1 from accidental trauma

Cohort characteristics

	Induction Survivors (n=50)	Early Deaths (n= 13)	P value
Age Median [min;max]	53 [24;78]	66 [33;80]	0.096
Gender Female %	52	69	0.265
BMI Median [min;max]	26 [14;39]	28 [23;35]	0.392
Risk %			0.015
Low	18	15	
Intermediate	66	31	
High	16	54	
Platelets at diagnosis Median [min;max]	20 [5;120]	23 [5;106]	0.905
White Blood Count Median [min;max]	1.40 [0.29;66.84]	11.65 [0.43;178]	0.006
LDH Median [min;max]	307 [132;1244]	308 [297; 901]	0.400

Cohort characteristics

→ Prognostic Factors



Cohort characteristics

	Induction Survivors (n=50)	Early Deaths (n= 13)	P value
Blasts BM % Median [min;max]	80 [65;95]	68 [40;93]	0.829
CD34 + %	22	31	0.720
BCR %			
BCR 1	56	31	0.099
BCR 2	6	-	
BCR 3	36	61	
Other	2	-	
Unknown	-	8	
Caryotype %			
t(15,17)	80	79	0.773
Normal	6	7	
No metaphases	12	7	
Unknown	2	7	

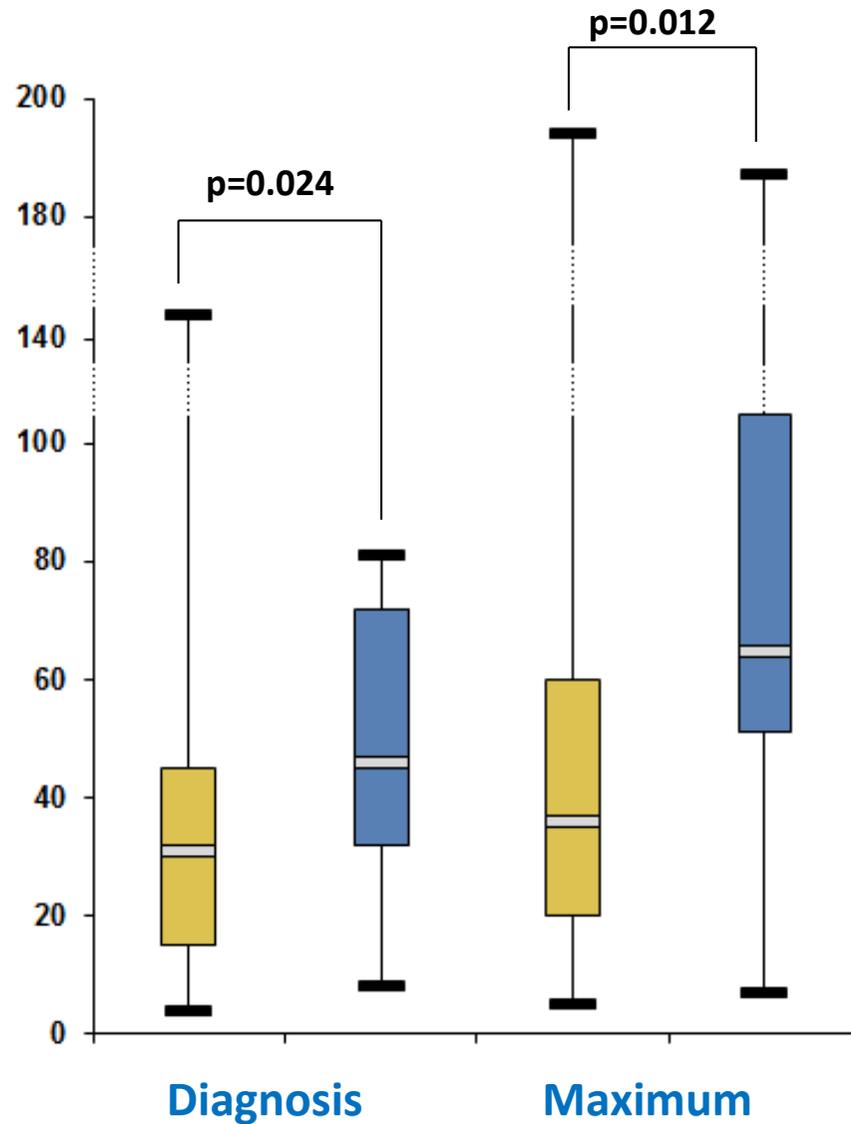
Cohort characteristics

	Induction Survivors (n=50)	Early Deaths (n= 13)	P value
D- dimers microgr/mL Median [min;max]			
At Diagnosis	31 [4;144]	46 [8;81]	0.024
Maximum	35 [5;194]	65 [7;187]	0.012
Fibrinogen mg/dL Median [min;max]			
At Diagnosis	156 [68;396]	141 [65;310]	0.241
Maximum	127 [56;277]	131 [39;252]	0.728

❖ **D-dimers levels** at diagnosis and during treatment were **higher** for those with early mortality

D-dimers

- Induction survivors
- Early mortality



Cohort characteristics

→ Prognostic Factors

Cohort characteristics

		Induction Survivors (n=50)	Early Deaths (n= 13)	P value
Infection at diagnosis	%	36	61.5	0.096
Hemorrhage at diagnosis	%	76	84.6	0.506

Hemorrhage Degree	Number (%)
No (0)	14 (22%)
Mild (1)	35 (56%)
Severe (2)	8 (12%)
Potentially Fatal (3)	6 (10%)

Rates of infection
and hemorrhage at
diagnosis were
similar in both
groups

Conclusion



- Our cohort of real-life APL patients had an **early mortality** rate of **21%**, mostly secondary to **CNS vascular events**
- **High leukocyte count** and **D-dimers level** were the main **determinants for early death**
 - »» **higher index of suspicion**
 - »» **prompt referral to specialized centers**
- supportive care and **targeted treatment as soon as possible** to avoid excess death at APL presentation

Thanks for your attention!





		Crude OR		Adjusted OR	
		OR	[95% CI]	OR	[95% CI]
Age	≤40 years	Ref		---	
	>40 years	2.59	[0.51-13.07]	---	
Gender	Male	Ref		---	
	Female	2.08	[0.57-7.64]	---	
Leucocytes	≤20000	Ref		Ref	
	>20000	5.11	[1.08-24.30]	4.12	[0.76-22.35]
D-dimers	≤70	Ref		Ref	
	>70	10.67	[1.69-67.21]	10.67	[1.69-67.21]
Fibrinogen	≥150	Ref		---	
	<150	1.73	[0.50-6.04]	---	
BMI	<30	Ref		---	
	≥30	0.56	[0.11-2.89]	---	
BM blasts	<80	Ref		---	
	≥80	0.78	[0.09-6.98]	---	
BCR	Not bcr1	Ref		---	
	With bcr1	0.37	[0.10-1.34]	---	
CD34	Negative	Ref		---	
	Positive	1.62	[0.42-6.26]	---	
Hemorrhage	Grade 0-2	Ref		Ref	
	Grade 3-5	2.85	[0.75-10.77]	2.61	[0.57-11.97]
Infection	No	Ref		Ref	
	Yes	2.93	[0.835-10.30]	1.53	[0.33-7.00]
Differentiation	No	Ref		---	
	Yes	0.88	[0.21-3.69]	---	
Sanz modified	Low/int	Ref		Ref	
	High/ultra	5.08	[1.02-25.29]	2.37	[0.40-14.04]

Multivariate Analysis

Quantos doentes do grupo morte precoce estavam a fazer ATRA?

-Todos

-Quantos morreram nas primeiras 48 horas?

-- cinco dos 13