



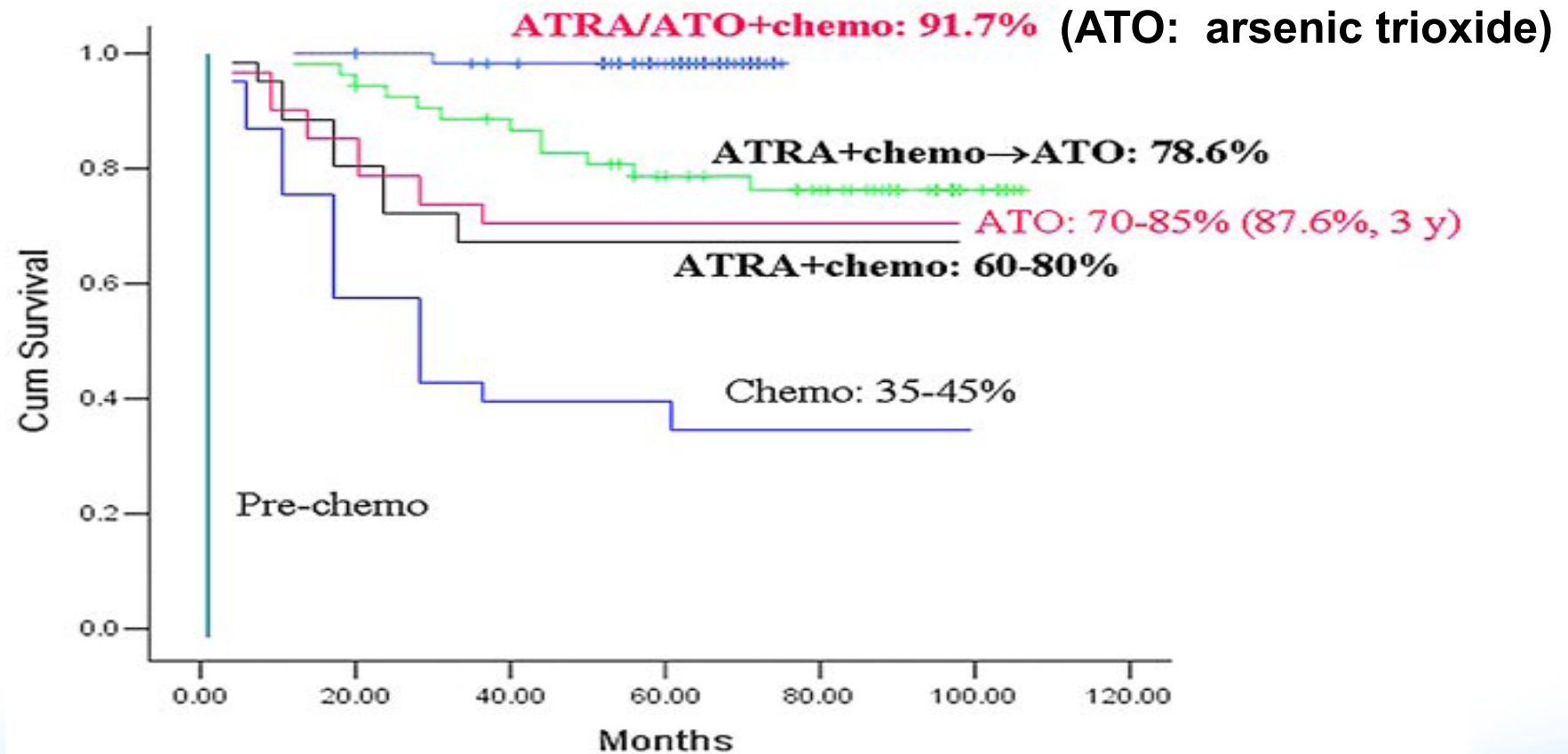
Early Death and Outcomes of Patients with APL using arsenic and ATRA as First-Line treatment :a real world study

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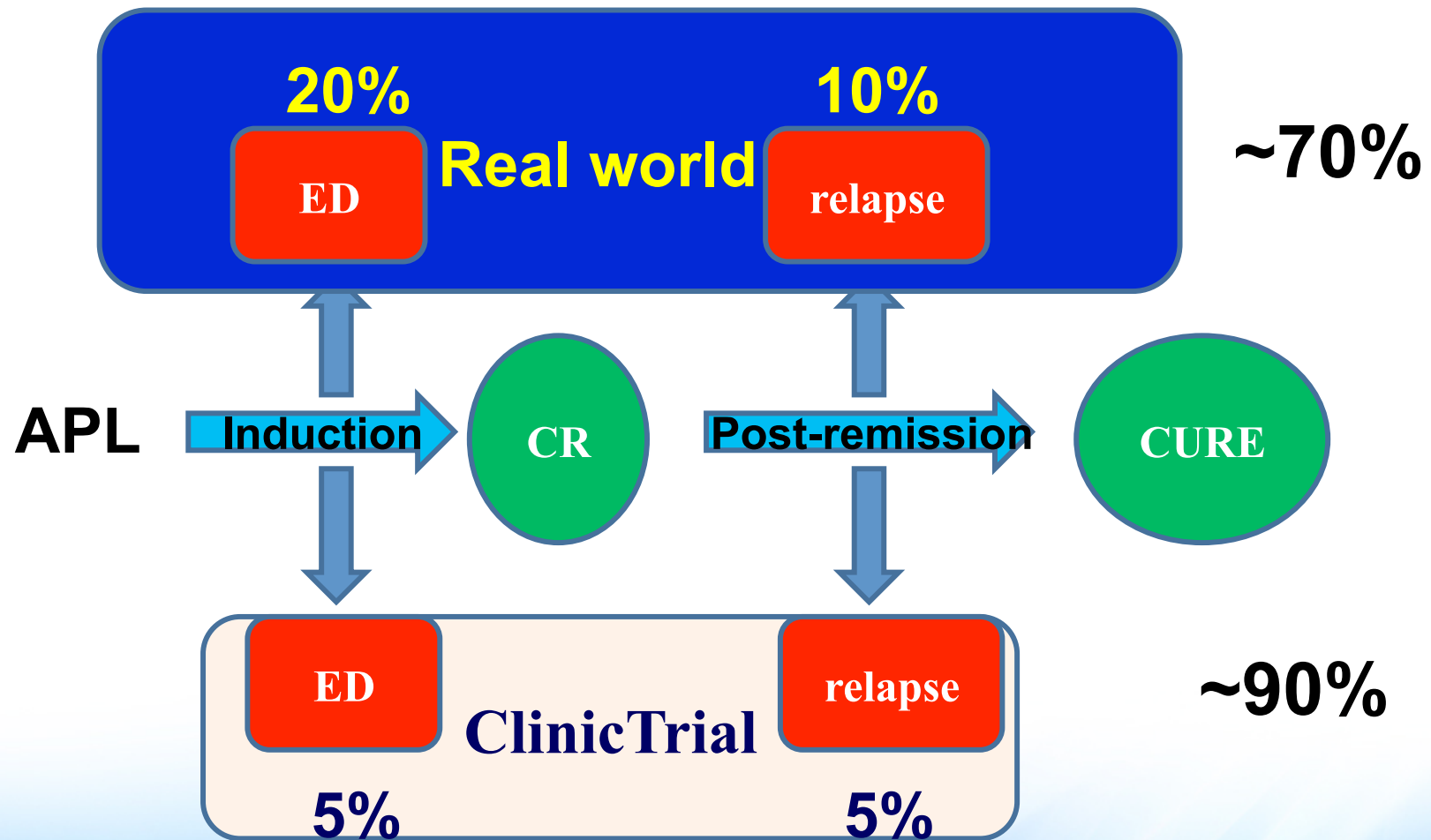
Survival improve dramatically in APL



Chen SJ, et al. Blood 2011;117:6425
Hu J, et al. PNAS 2009;106:3342

Shen ZX, et al. PNAS 2004;101:5328
Sanz MA, et al. Blood 2010;115:5137

The gap between clinical trial and real world study



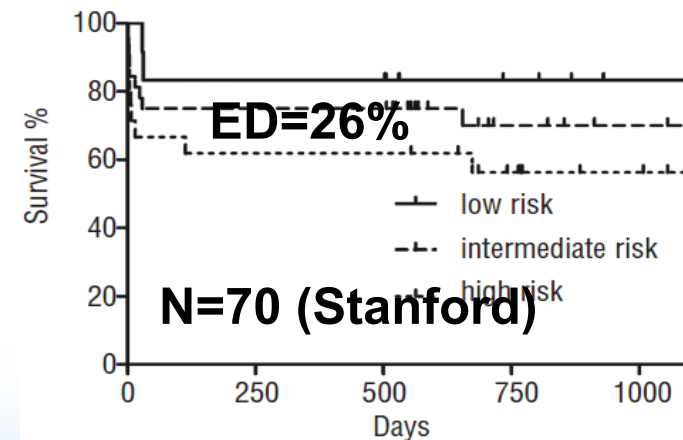
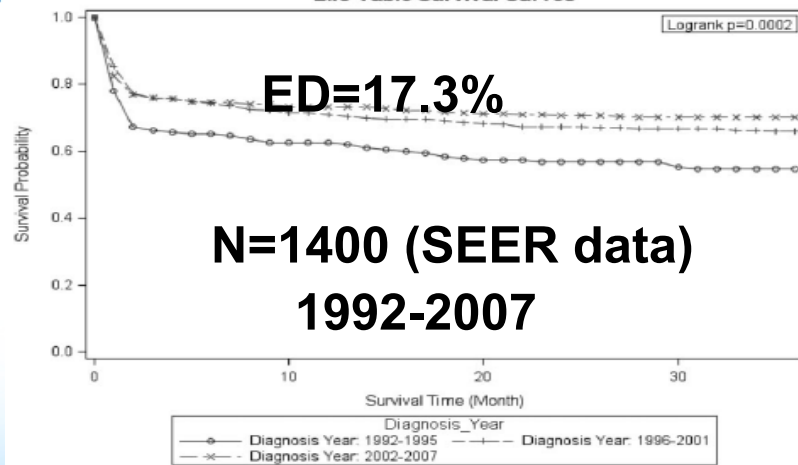
ED remains high in ATRA+Chemo Era

Early death rate in acute promyelocytic leukemia remains high despite all-*trans* retinoic acid

Jae H. Park,¹ Baozhen Qiao,² Katherine S. Panageas,³ Maria J. Schymura,² Joseph G. Jurcic,¹ Todd L. Rosenblatt,¹

Treatment advances have not improved the early death rate in acute promyelocytic leukemia

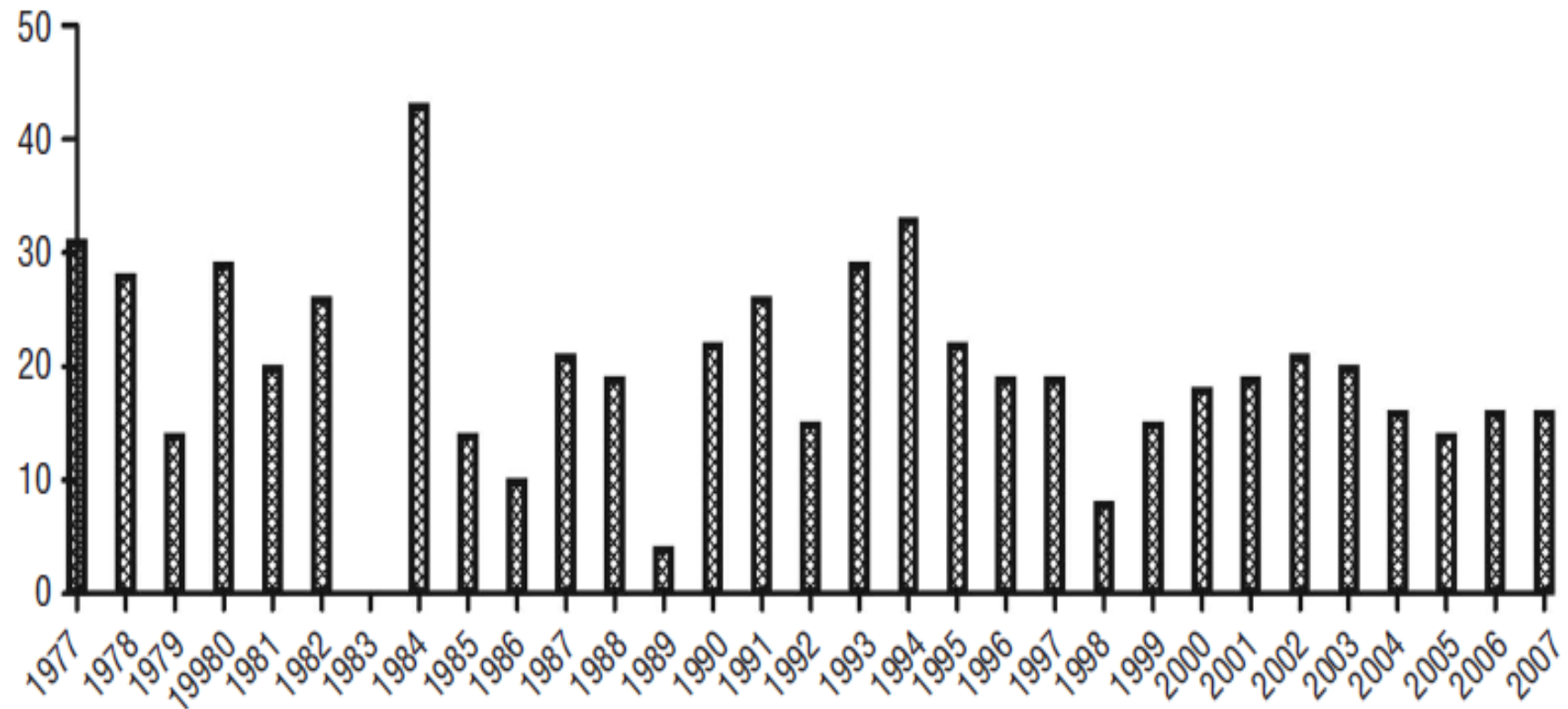
James Scott McClellan,^{1,2*} Holbrook E. Kohrt^{1,*} Steven Coutre,¹ Jason R. Gotlib,¹ Ravindra Maieti,^{1,2} Ash A. Alizadeh,^{1,2#} and Bruno C. Medeiros^{1#}



Park JH, et al. Blood 2011;118:1248

McClellan JS, et al. Haematologica,2012;97:133

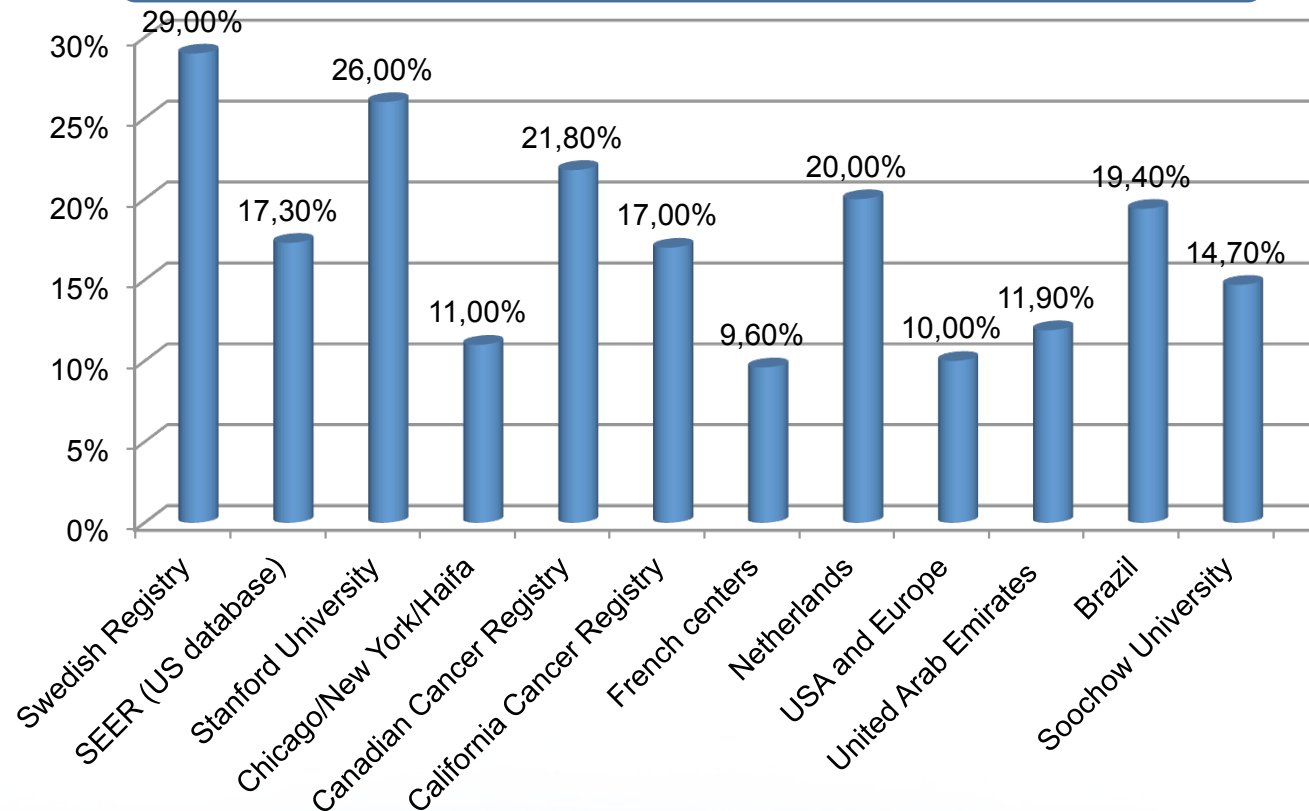
ED remains high in ATRA+Chemo Era



McClellan JS, et al. Haematologica,2012;97:133

Seek risk factors for ED

ATRA+Chemo Era



factors

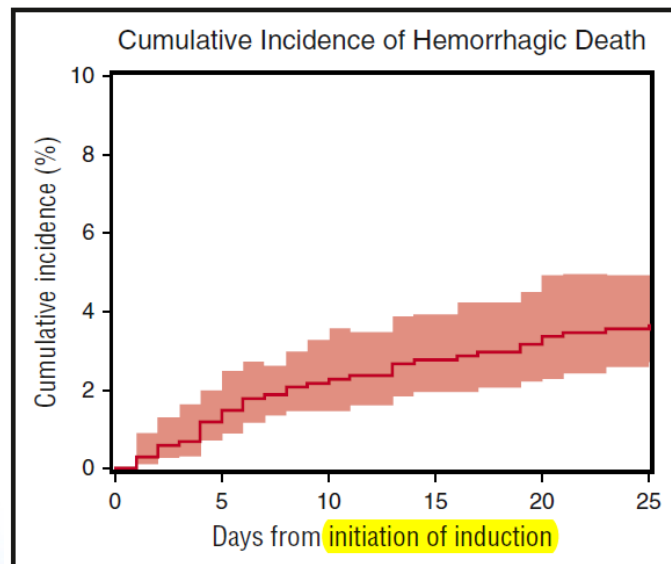
- 1. WBC**
- 2. AGE**
- 3. PLT**
- 4. DIC**
- 5. PS**

N=5090

CLINICAL TRIALS AND OBSERVATIONS

Determinants of fatal bleeding during induction therapy for acute promyelocytic leukemia in the ATRA era

Simon Mantha,¹ Debra A. Goldman,² Sean M. Devlin,² Ju-Whei Lee,³ Diana Zannino,⁴ Marnie Collins,⁴ Dan Douer,⁵ Harry J. Iland,⁶ Mark R. Litzow,⁷ Eytan M. Stein,⁵ Frederick R. Appelbaum,⁸ Richard A. Larson,⁹ Richard Stone,¹⁰ Bayard L. Powell,¹¹ Susan Geyer,¹² Kristina Laumann,¹³ Jacob M. Rowe,¹⁴ Harry Erba,¹⁵ Steven Coutre,¹⁶ Megan Othus,¹⁷ Jae H. Park,⁵ Peter H. Wiernik,¹⁸ and Martin S. Tallman⁵

**N=995****5 clinic trials****Hemorrhagic death=37 (3.7%)****WBC is risk factor for HD**

Question

- Whether ED rate decrease in Arsenic era?
- The risk factors for ED in the arsenic era?

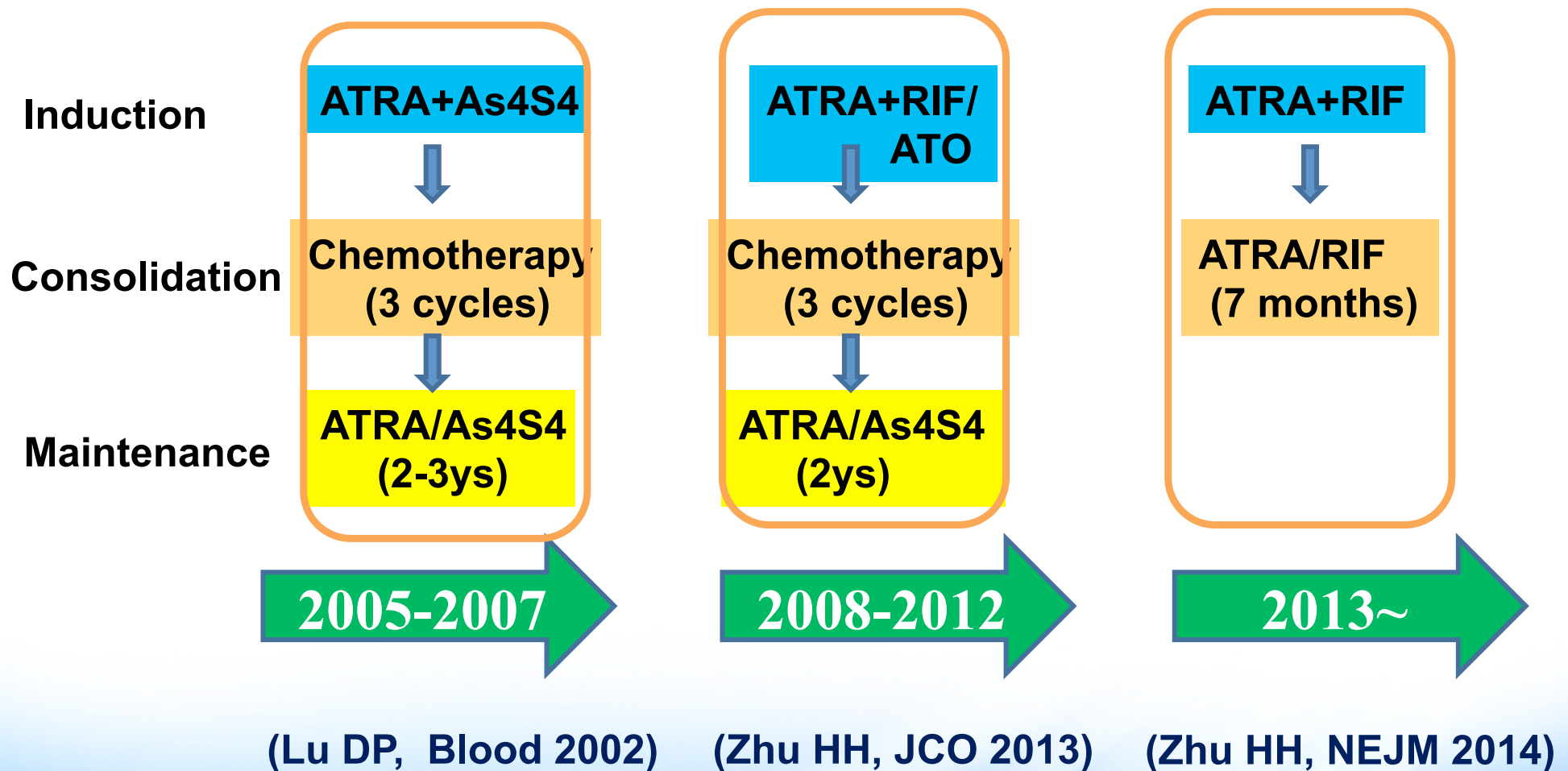
Purpose of our study

- To get the ED rate in arsenic era
- The risk factors for ED in the arsenic era
- In a real world study

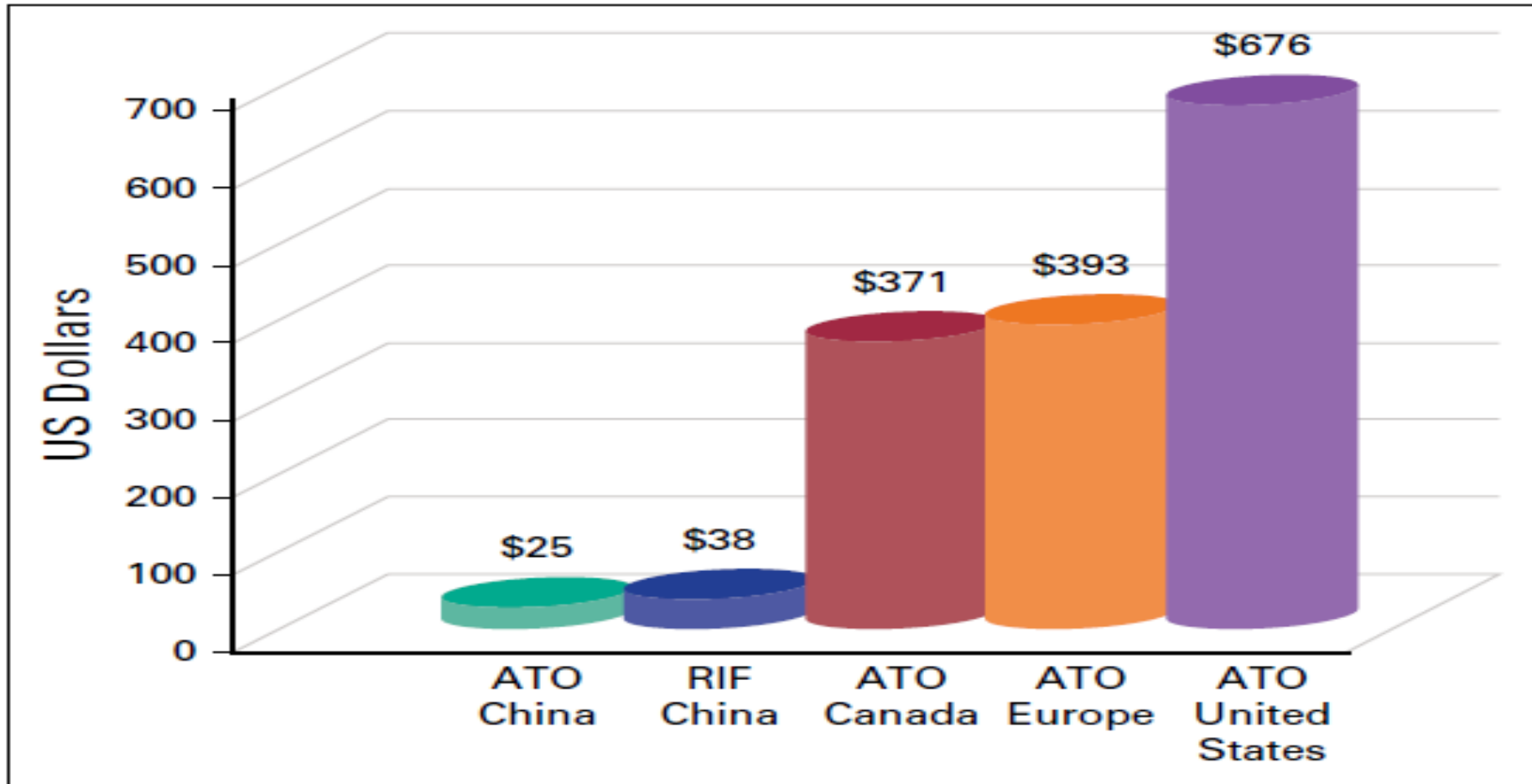
Study design

- **309 APL patients in our center**
- **Period :2005.1 to 2013.12**
- **Last follow-up: 2017.05**

Protocols used in our center



The costs of arsenic per day in China and other countries

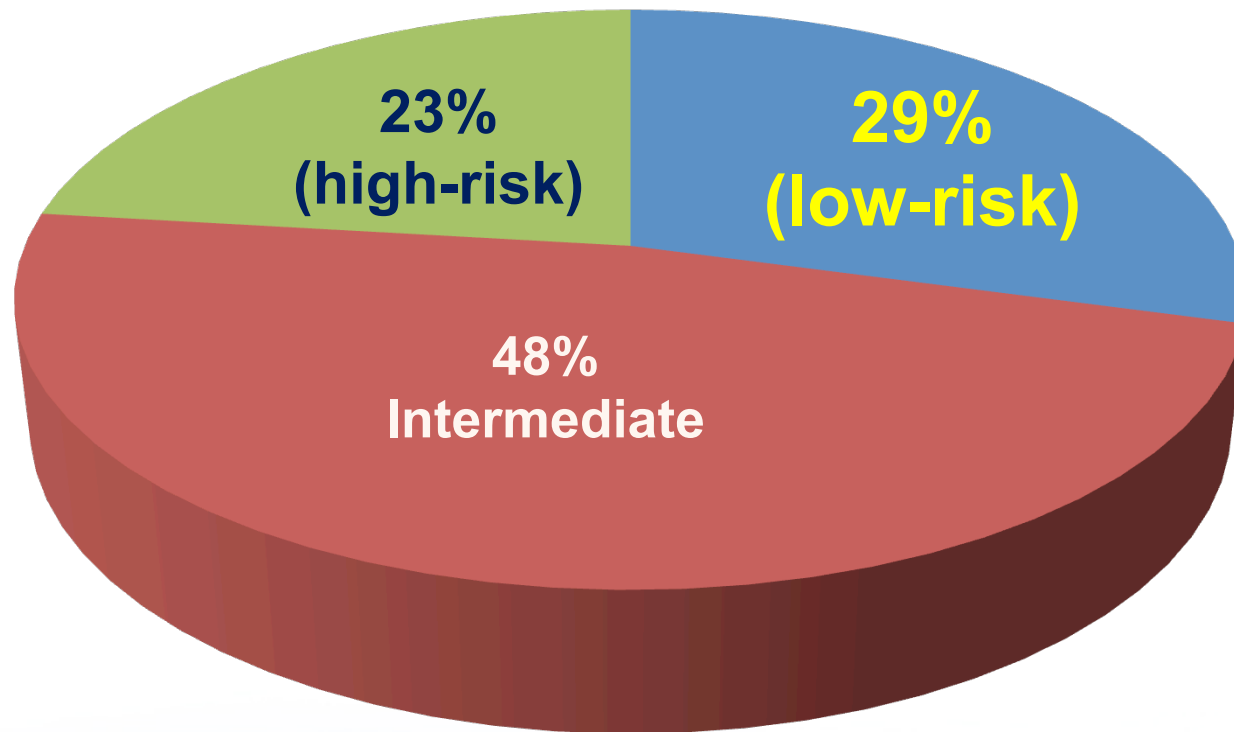


Zhu HH, et al. JGO 2016;

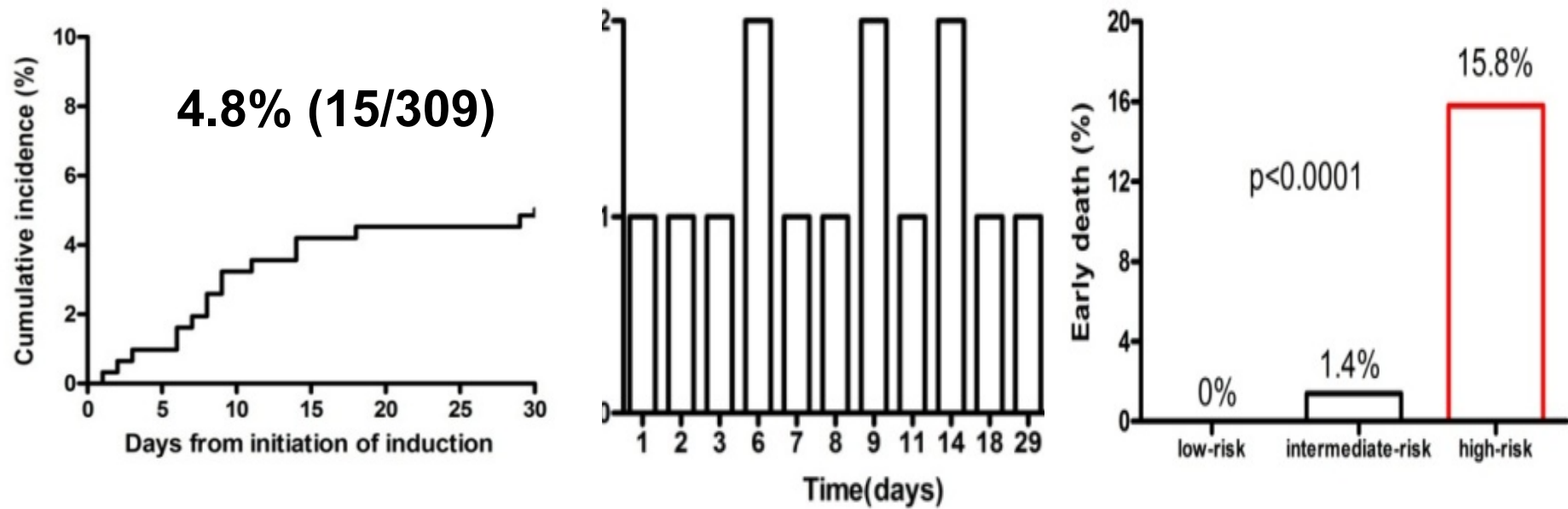
Results

- Age : median 34 ys(2-82ys)
- WBC: median $2.6 \times 10^9/L$ (0.2-219)

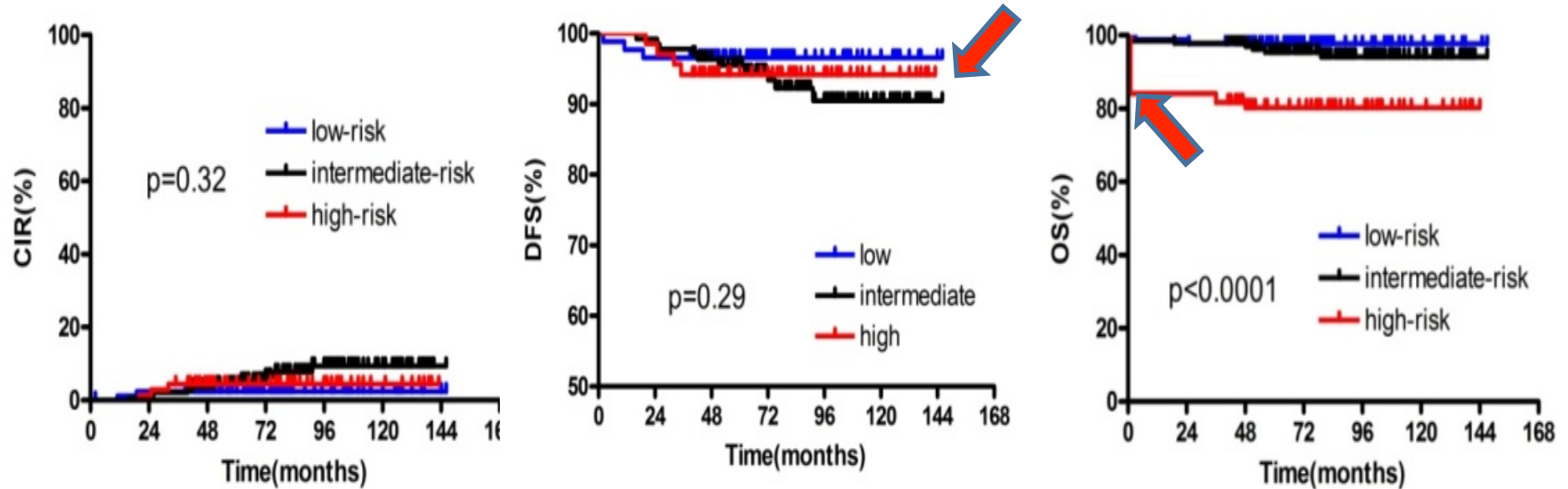
The patients in low-inter-high risk



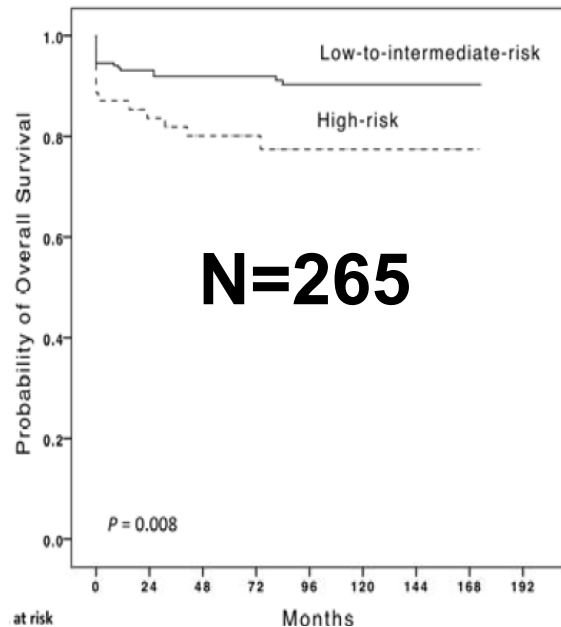
ED in our study



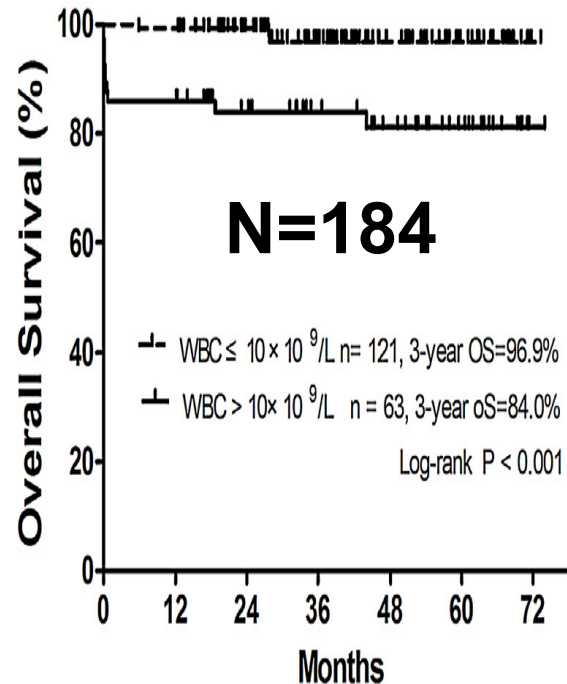
Long-term outcomes of APL patients in this study



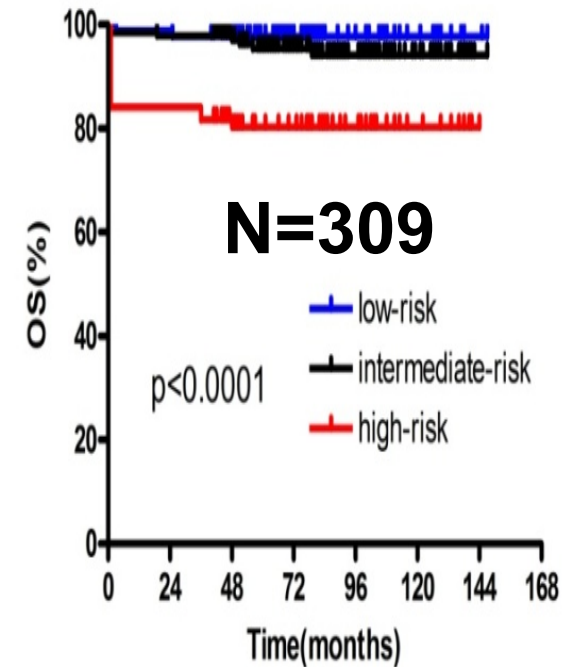
OS difference between high-vs. low-risk APL lies in ED in arsenic era



Shanghai
Zhu H, Blood 2016

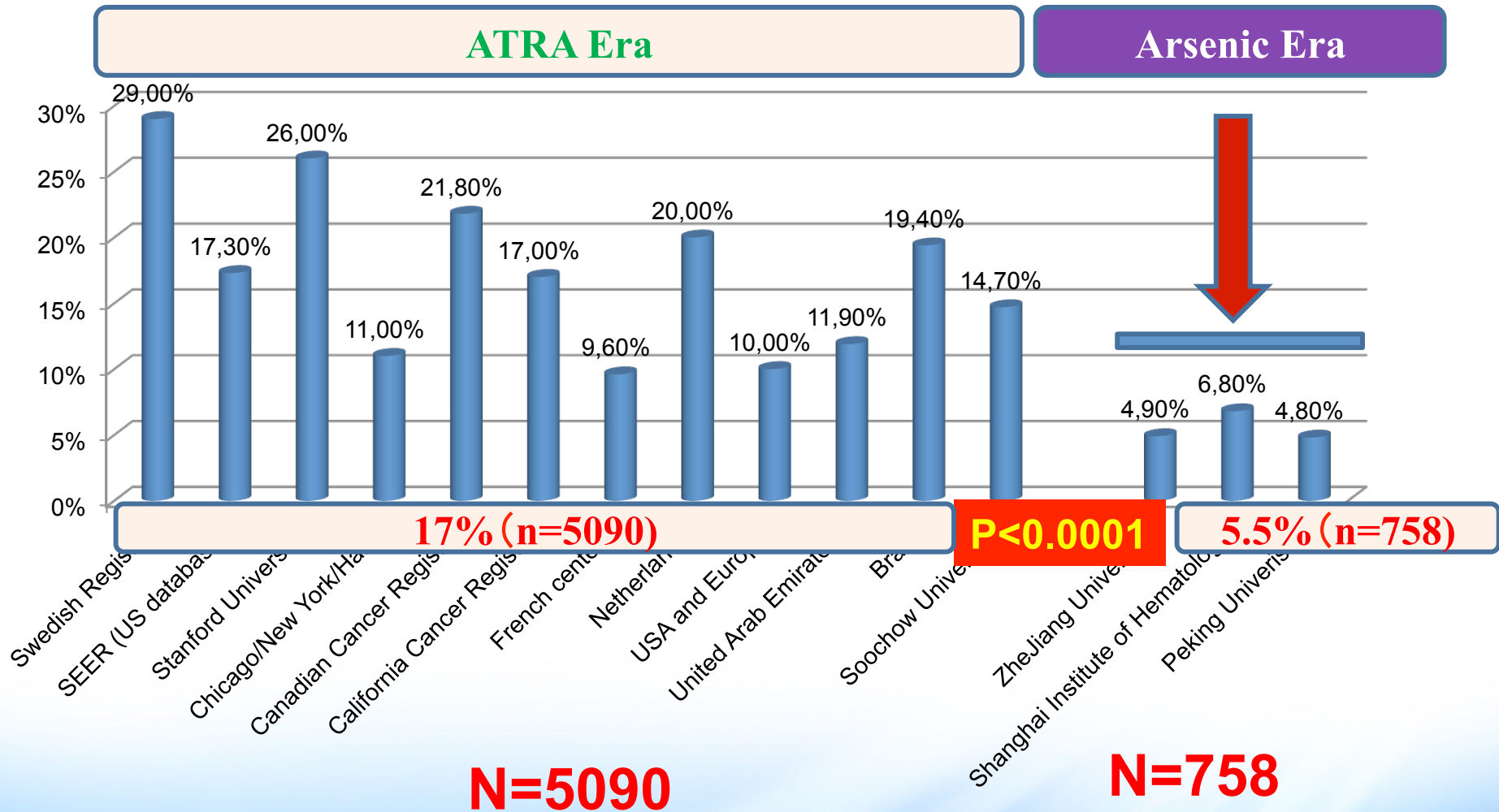


Zhejiang University
Lou YJ, Leuk Res 2015



Beijing
This study

ED is lower in arsenic era than ATRA era



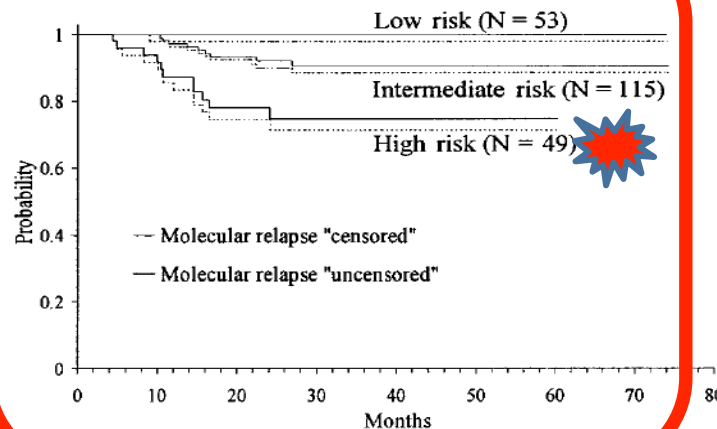
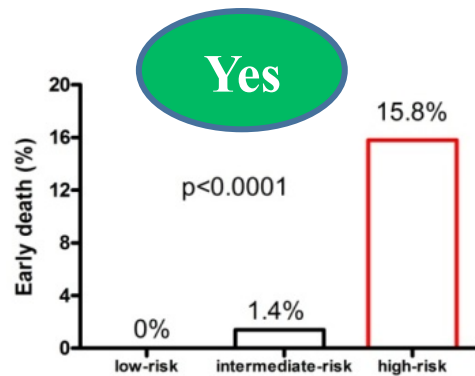
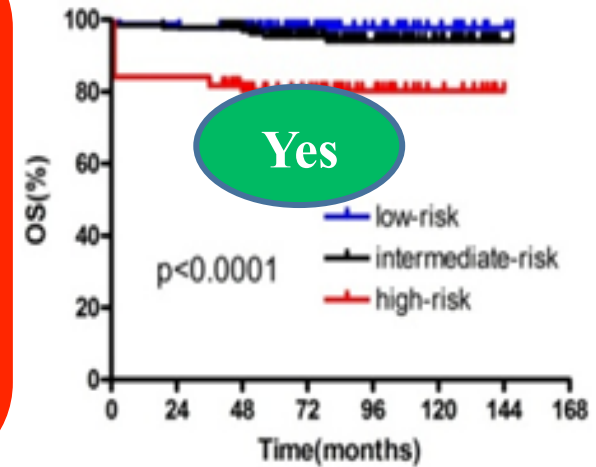
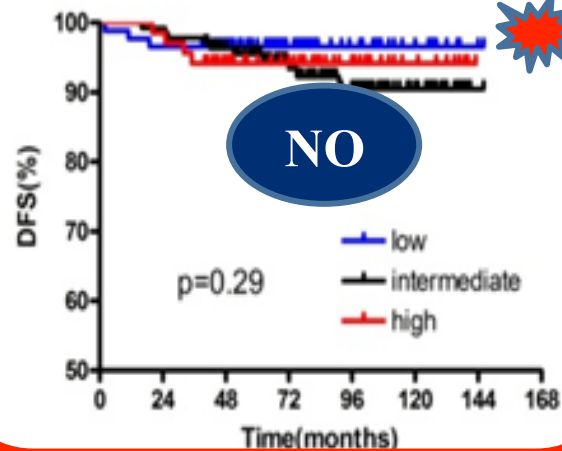
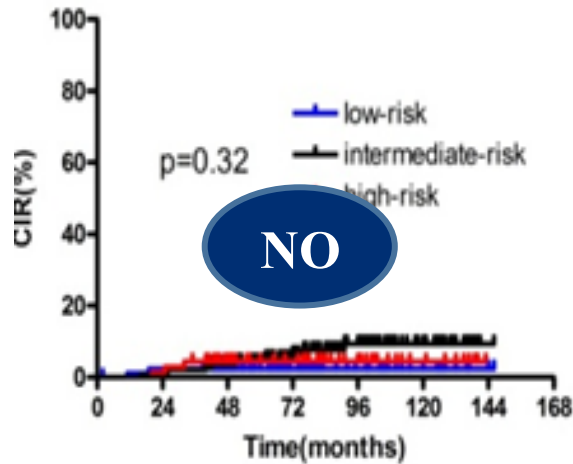
High WBC is independent risk factor for ED in arsenic era

Characteristic	No. included (no.of die)	Univariate analysis		Multivariate analysis	
		HR (95% CI)	<i>p value</i>	HR (95% CI)	<i>p value</i>
WBC count group(%)					
>10	81(16)	5.29(1.80-15.58)	0.002	5.34(2.36-12.10)	<0.0001
≤10	228(9)	REF		REF	
Prothrombin time group (%)					
>12.5s	234(20)	15.87(1.72-142.86)	0.015		
≤12.5s	75(5)	REF			

Others is not risk factors for ED in arsenic era

- age sex
- hemoglobin, APTT, fibrinogen
- D-dimer creatinine level
- blasts in BM PML-RARA

Sanz Score provides new meanings in arsenic era



Conclusions

- In this large cohort of APL patients under a 'real world' setting, a relative low ED and high OS could be achieved
- High WBC count emerged as an independent predictor of ED and OS in arsenic era

Acknowledgements

- All the patients involved in this study
- My colleagues
- Prof. Lo-Coco F, Vikram M



Thanks for your attention