

The complete summary table for the three case studies.

	<b>FIRST (Revlimid)</b>	<b>INO-VATE (Inotuzumab)</b>	<b>GOG-0128 (Bevacizumab)</b>
<b>Trial Information</b>			
Full name	Frontline Investigation of Revlimid Plus Dexamethasone versus Standard Thalidomide	Inotuzumab Ozogamicin trial to investigate Tolerability and Efficacy	Gynecologic Oncology Group (number 0128)
Disease	Transplant-ineligible patients with myeloma	Acute lymphoblastic leukemia	Ovarian cancer
Primary endpoint	Progression-free survival with continuous lenalidomide-dexamethasone versus MPT	Overall survival and complete remission (including complete remission with incomplete hematologic recovery)	Cancer PFS: 1. An increase in the CA-125 level according to Gynecologic Cancer Intergroup criteria 21; 2. Global deterioration of health; 3. Death from any cause
Therapies	1. Melphalan + prednisone + thalidomide (MPT) 2. Lenalidomide + low-dose dexamethasone for eighteen 28-day cycles (Rd continuous) 3. Continued Rd beyond eighteen 28-day cycles (Rd18)	1. Standard intensive chemotherapy 2. Inotuzumab ozogamicin	1. Carboplatin and paclitaxel (CPP) 2. CPP with concurrent bevacizumab and followed by bevacizumab single agent (CPB15+) 3. CPP with concurrent bevacizumab (CPB15)
Trials information	Multicenter randomized (1:1:1) open-label	Multicenter randomized (1:1) open-label	Multicenter randomized (1:1:1) double-blind
Sample size	1082	326	1248
Accrual time (months)	32	36	24
Follow-up time (months)	60	42	42
<b>Assumption of Proportionality</b>			

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G-T test	$p < 1.0 \text{ e-}6$	$p = 5.0 \text{ e-}1$	$p = 8.0 \text{ e-}4$
Schoenfeld's global test	$p < 1.0 \text{ e-}7$	$p = 3.5 \text{ e-}1$	$p = 1.6 \text{ e-}3$
Hazard rate plot	Violation	Violation	Violation
NPH type	Early crossing / Delayed effect	Delayed effect	Diminishing effect / Late crossing
<b>Methods and Conclusions from the Comparison Paper [5]</b>			
Log-rank test (1-sided)	$p < 1.0 \text{ e-}4$	$p = 2.0 \text{ e-}2$	$p < 1.0 \text{ e-}4$
Max-Combo test (1-sided)	$p < 1.0 \text{ e-}9$ (much smaller)	$p = 2.1 \text{ e-}3$	$p < 1.0 \text{ e-}8$ (much smaller)
Weight selected	FH (0, 1)	FH (0, 1)	FH (1, 0)
Discussion	When there is a delayed treatment effect, the MaxCombo test tends to have a higher power in testing the hypotheses, however, with sufficient follow-up and sample size, the log-rank test may overcome this deficiency	The improvement in power with the MaxCombo test may not be apparent when NPH is marginal	The large sample size in both arms would have provided adequate power
<b>Conclusions from the Original Papers [1, 4, 3, 2]</b>			

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Conclusions	<p>1. Log-rank test for PFS: Rd continuous vs. MPT (HR=0.72, p &lt;0.001)</p> <p>Rd continuous vs. Rd18 (HR=0.70, p &lt;0.001)</p> <p>Rd18 vs. MPT (HR=1.03, p=0.700)</p> <p>2. OS at 3 years: 70%, 66%, 62% for Rd continuous, Rd18, and MPT; OS at 4 years: 59%, 56%, 51%</p> <p>3. Log-rank test for OS: Rd continuous vs. MPT (HR=0.78, p=0.020)</p>	<p>1. Median PFS: IO 5mo vs. Standard 1.8mo</p> <p>2. Log-rank test of disease progression: HR=0.45, p &lt;0.001</p> <p>3. Median OS: IO 7.7mo vs. Standard 6.7mo</p> <p>4. Log-rank test of death: HR=0.77, p=0.040</p> <p>5. The rate of 2-year OS: IO 23% vs. Standard 10%</p>	<p>1. Median PFS: 10.3, 11.2, and 14.1 months in the CPP, CPB15, and CPB15+</p> <p>2. Log-rank test of progression or death: CPB15 vs. CPP (HR=0.91, p=0.160) CPB15+ vs. CPP (HR=0.717, p &lt;0.001)</p> <p>3. Median OS: 39.3, 38.7, and 39.7 months in the CPP, CPB15, and CPB15+</p> <p>4. LR test of death: CPB15 vs. CPP (HR=1.04, p=0.760) CPB15 vs. CPB15+ (HR=0.92 p=0.450)</p> <p>5. Quality of life: no significant differences across the three treatment groups</p> <p>6. Mean FACT-O TOI scores before cycle 4: CPB15 vs. CPP (-2.70, p &lt;0.001) CPB15+ vs. CPP (-3.00, p &lt;0.001)</p>

## References

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- [2] Bevacizumab-ProductLabel. Genentech. [https://www.accessdata.fda.gov/drugsatfda\\_docs/label/2020/125085s3371b1.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/label/2020/125085s3371b1.pdf), 2020.
- [3] Robert A Burger, Mark F Brady, Michael A Bookman, Gini F Fleming, Bradley J Monk, Helen Huang, Robert S Mannel, Howard D Homesley, Jeffrey Fowler, Benjamin E Greer, et al. Incorporation of bevacizumab in the primary treatment of ovarian cancer. *New England Journal of Medicine*, 365(26):2473–2483, 2011.
- [4] Hagop M Kantarjian, Daniel J DeAngelo, Matthias Stelljes, Giovanni Martinelli, Michaela Liedtke, Wendy Stock, Nicola Gökbuget, Susan O’Brien, Kongming Wang, Tao Wang, et al. Inotuzumab ozogamicin versus standard therapy for acute lymphoblastic leukemia. *New England Journal of Medicine*, 375(8):740–753, 2016.
- [5] Yuan-Li Shen, Xin Wang, Mushti Sirisha, Flora Mulkey, Jiayi Zhou, Xin Gao, Lijun Zhang, Thomas Gwise, Shenghui Tang, Marc Theoret, Richard Pazdur, and Rajeshwari Sridhara. Nonproportional hazards—an evaluation of the maxcombo test in cancer clinical trials. *Statistics in Biopharmaceutical Research*, 0(0):1–10, 2022.