From Hazard Ratio to Clinical Impact: Number Needed to Treat in Platinum-Resistant Ovarian Cancer

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Poster CO62

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CONCLUSIONS

- The number needed to treat (NNT) is a measure of how many patients need to be treated with a given therapy for one additional patient to experience a clinical benefit such as overall survival (OS) compared with another therapy
- Relacorilant plus nab-paclitaxel was recently approved for the treatment of platinum-resistant ovarian cancer (PROC)
- For relacorilant plus nab-paclitaxel versus nab-paclitaxel, the estimated landmark NNT for OS was 10 at 12 months and 5.3 at 18 months, reflecting a larger absolute difference in survival at the later landmark
- While economic outcomes were not assessed, lower NNT values could potentially translate into a lower cost per additional survivor, which should be explored in future economic analyses

BACKGROUND

- Platinum-resistant ovarian cancer (PROC) is a common gynecologic cancer with a 5-year relative survival rate of only 52%[1,2]
- Standard-of-care monotherapies for PROC include paclitaxel, pegylated liposomal doxorubicin (PLD), topotecan, and gemcitabine[3]
  - Paclitaxel has demonstrated similar or better outcomes across separate clinical trials of PLD, topotecan, and gemcitabine[4–10]
  - Although not used as frequently, nab-paclitaxel, the albumin-coated nanoparticle of paclitaxel, showed comparable effectiveness to paclitaxel in a real-world study, with a lower rate of peripheral neuropathy[11]
  - Nab-paclitaxel also exhibited safety and effectiveness outcomes similar to or better than PLD, topotecan, and gemcitabine in a real-world analysis[12]
- The number needed to treat (NNT) is a measure of how many patients would need to be treated with a given therapy for one additional patient to experience a clinical benefit compared with another therapy[13]
  - For overall survival (OS), NNT expresses the absolute difference in survival probability at a specified time point in a clinically interpretable metric
  - Because NNT is outcome- and time-specific, it should be interpreted in the context of the specified outcome and follow-up time
  - Although there is no universally accepted threshold for NNT values, a treatment with a lower NNT is recognized as having a greater benefit
  - A recent survey reported that 70% of US payers found NNT to be a valuable measure[14]
- NNT values for progression-free survival of bevacizumab and poly(ADP-ribose) polymerase inhibitors in their pivotal trials for advanced ovarian cancer have been reported,[15] but NNT values for the recently approved novel therapies for PROC have not been examined. These agents include:
  - Relacorilant plus nab-paclitaxel in patients who had received one to three prior systemic treatment regimens, at least one of which included bevacizumab[16]
  - Pembrolizumab plus paclitaxel ± bevacizumab in patients with programmed death-ligand 1-positive tumors who had received one to two prior systemic treatments[17]
  - Mirvetuximab soravtansine in patients with folate receptor-α-positive PROC who had received one to three prior systemic treatments[18]

OBJECTIVE

- To estimate landmark NNTs for OS at 12 and 18 months for three recently approved therapies for PROC, using data from their pivotal phase 3 trials

METHODS

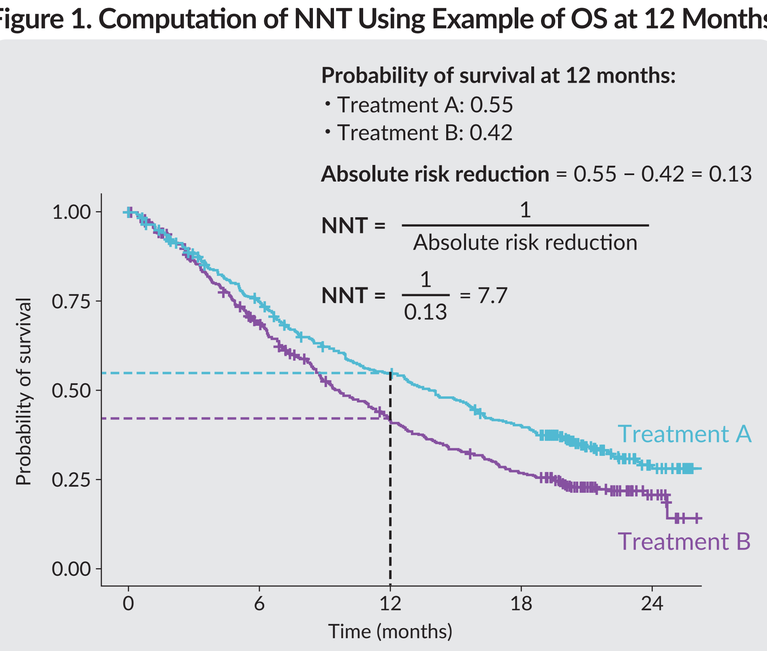
- NNT is calculated as the inverse of the absolute risk reduction[13] at a given time point (**Figure 1**)
  - In this example, the NNT calculated using OS at 12 months is 7.7, meaning that about eight patients would need to be treated with Treatment A instead of Treatment B for one additional patient to be alive at 12 months
- OS data from Kaplan–Meier curves from pivotal trials, using populations corresponding to the approved indication for each therapy, were used to derive NNT values for relacorilant plus nab-paclitaxel vs nab-paclitaxel, pembrolizumab plus paclitaxel ± bevacizumab vs paclitaxel ± bevacizumab, and mirvetuximab soravtansine vs physician's choice of chemotherapy (**Table 1**)
  - When OS probabilities from prespecified landmark analyses were unavailable, Kaplan–Meier curves were digitized to estimate survival probabilities at the corresponding time point
  - For the MIRASOL trial,[19] OS probabilities for the paclitaxel subgroup were estimated from the mirvetuximab Kaplan–Meier curve using the reported hazard ratio, assuming proportional hazards and applying an exponential transformation
- No head-to-head or cross-trial comparisons were performed; each therapy was evaluated relative to its respective comparator arm in the pivotal trial

Table 1. Clinical Trial Populations and Data Used in the NNT Calculations

Pivotal trial	Patient population for the approved indication	Clinical data	Median follow-up, months	Hazard ratio vs comparator (95% CI)	% alive at 12 months	% alive at 18 months
ROSELLA[20]	ITT (no biomarker testing required)	Relacorilant + nab-paclitaxel	24.8	0.65 (0.51–0.83)	60.0	46.0
		Nab-paclitaxel			50.0	27.0
KEYNOTE-B96[21]	Subgroup: CPS ≥1[a]	Pembrolizumab + paclitaxel ± bevacizumab	32.7	0.76 (0.61–0.94)	69.1	51.5
		Paclitaxel ± bevacizumab			59.3	38.9
MIRASOL[19]	ITT (FRα⁺ patients)	Mirvetuximab soravtansine	13.1	0.67 (0.50–0.89)	64.1	44.0
		Physician's choice chemotherapy			54.2	33.0
	Subgroup (FRα⁺ patients on paclitaxel in control arm)	Mirvetuximab soravtansine	13.1[b]	0.85 (0.55–1.32)	64.1	44.0
		Paclitaxel			59.3	38.1

[a]The subgroup with CPS ≥1 was used because this is the population for which pembrolizumab plus paclitaxel ± bevacizumab is approved.[17]
[b]Median follow-up time for this subgroup was not reported, so it was assumed to be the same as for the ITT population.
CI, confidence interval; CPS, programmed death-ligand 1 combined positive score; FRα⁺, folate receptor-α-positive; ITT, intention-to-treat; NR, not reported.

Figure 1. Computation of NNT Using Example of OS at 12 Months



NNT, number needed to treat; OS, overall survival.

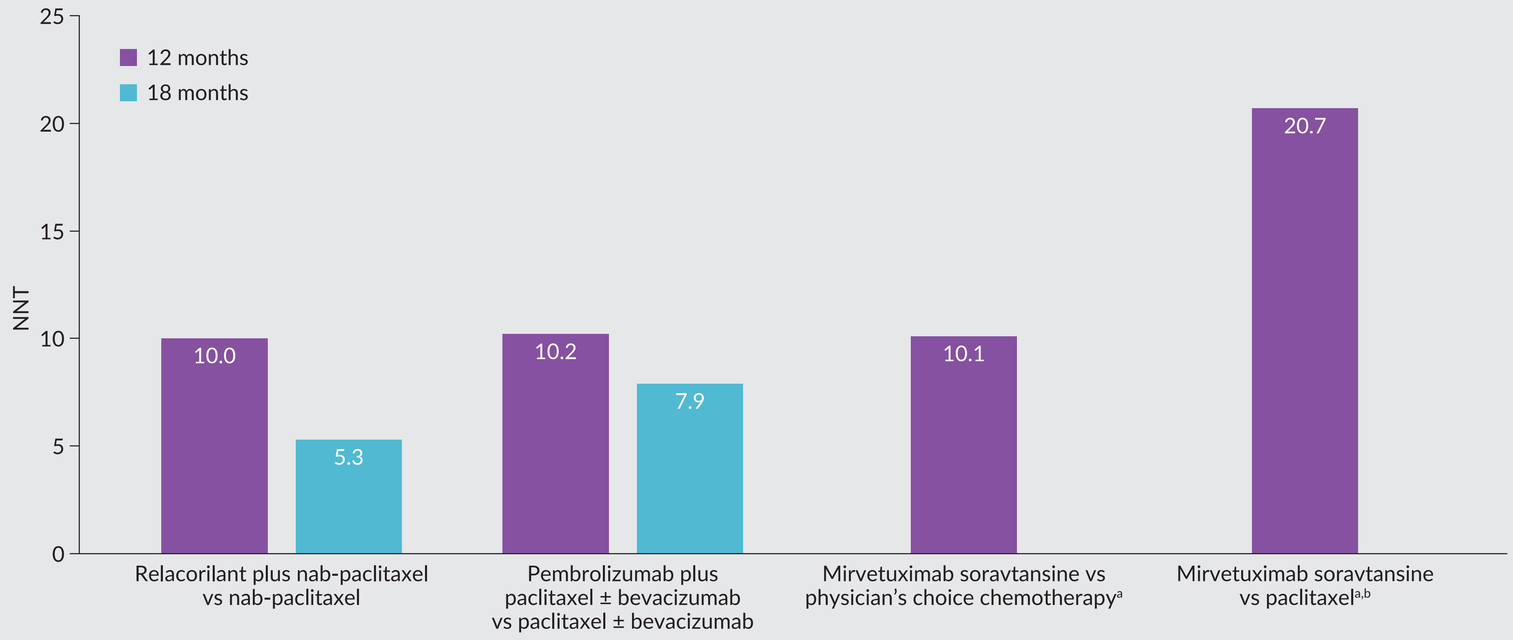
RESULTS

- The NNTs for OS at 12 months were similar (about 10 patients) for the three regimens studied (**Figure 2**)
  - For mirvetuximab soravtansine vs the paclitaxel subgroup, the NNT at 12 months was about 21 patients (**Figure 2**)
- Differences were observed at the later time point: The NNT at 18 months was about five patients for relacorilant plus nab-paclitaxel vs nab-paclitaxel, and about eight for pembrolizumab plus paclitaxel ± bevacizumab vs paclitaxel ± bevacizumab (**Figure 2**)
  - For the mirvetuximab soravtansine regimen, the median follow-up time was insufficient to estimate the NNT at 18 months

DISCUSSION

- NNT enables the contextualization of treatment benefit in PROC
- In this analysis, NNT values for OS were similar at 12 months among the examined therapies (10 patients), while NNT decreased at 18 months to five patients for relacorilant plus nab-paclitaxel vs nab-paclitaxel, and eight patients for pembrolizumab plus paclitaxel ± bevacizumab vs paclitaxel ± bevacizumab
  - This indicates that relacorilant plus nab-paclitaxel delivers consistent clinical effectiveness without biomarker restriction, as with other newer PROC treatments
- There are several limitations to this analysis:
  - NNT compresses a continuous effect (risk difference) into a single number
    - It does not convey the amount of benefit individuals may receive or the trade-off of harms and benefits
  - NNT values depend on the duration of follow-up and can vary with time
  - NNT results are not ideal for comparison across trial populations due to variability in baseline population demographics, disease history, duration of treatment, comparator arm, and other factors[13,22]
    - Thus, results are descriptive and should not be interpreted as comparative treatment effects across trials
  - Mirvetuximab vs paclitaxel estimates are derived from a subgroup analysis not powered for this comparison and should be interpreted with caution
- Overall, NNT is a simple metric that is useful for communicating clinical benefit to payers, patients, healthcare providers, and health technology assessment organizations
  - While economic outcomes were not assessed here, NNT may provide a clinically interpretable metric that could help inform economic evaluations, including analyses of cost per additional survivor

Figure 2. NNT for OS, as Calculated from Pivotal Phase 3 Trial Data



[a]Median follow-up time was insufficient to estimate the NNT at 18 months.
[b]Exploratory subgroup estimate; the OS hazard ratio 95% CI included 1.0, and the findings should be interpreted with caution.
CI, confidence interval; NNT, number needed to treat; OS, overall survival.

References

1. National Cancer Institute. Cancer Stat Facts: Ovarian Cancer. https://seer.cancer.gov/statfacts/html/ovary.html (accessed September 24, 2026).
2. Siegel RL, et al. *CA Cancer J Clin*. 2026;76(1):e70043.
3. González-Martín A, et al. *Ann Oncol*. 2023;34(10):833–848.
4. Poveda AM, et al. *J Clin Oncol*. 2015;33(32):3836–3838.
5. Chekerov R, et al. *Lancet Oncol*. 2018;19(9):1247–1258.
6. Konstantinopoulos PA, et al. *JCO Precis Oncol*. 2024;8:e2300635.
7. Krasny S, et al. *Front Oncol*. 2024;14:1343023.
8. McGuire WP, et al. *BMC Cancer*. 2018;18(1):1292.
9. Naumann RW, et al. *J Clin Oncol*. 2013;31(35):4400–4406.
10. Fuh KC, et al. *J Clin Oncol*. 2024;42(17 suppl):LBA5515.
11. Shahin MS, et al. *Gynecol Oncol*. 2026;204:202–209.
12. Shahin MS, et al. *ESMO Open*. 2026;11(S6):24–25.
13. Laupacis A, et al. *N Engl J Med*. 1988;318(26):1728–1733.
14. Fletcher-Louis M, et al. *Value Health*. 2025;28(S2):S473.
15. Bartoletti M, et al. *JAMA Netw Open*. 2022;5(12):e2245077.
16. Corcept Therapeutics Incorporated. Lifyorli (relacorilant) Prescribing Information. Redwood City, CA, USA. 2026.
17. Merck Sharp & Dohme LLC. Keytruda (pembrolizumab) Prescribing Information. Rahway, NJ, USA. 2026.
18. ImmunoGen I. Elahere (mirvetuximab soravtansine-gynx) Prescribing Information. Waltham, MA, USA. 2024.
19. Moore KN, et al. *N Engl J Med*. 2023;389(23):2162–2174.
20. Lorusso D, et al. *Lancet*. 2026;407(10538):1513–1524.
21. Colombo N, et al. *Lancet*. 2026;407(10538):1525–1537.
22. Davis MP, Vanenkevort E. *J Pain Symptom Manage*. 2024;68(3):e190–e193.

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