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Real-world treatment pattern and drop-off among recurrent or metastatic cervical cancer patients: a US community oncology-based analysis

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BACKGROUND

- There is no current real-world data on the proportion of eligible second-line (2L) recurrent or metastatic cervical cancer (r/mCC) patients who received treatment following progression on first-line (1L) chemotherapy doublet +/- bevacizumab. [1-3]
- These data are needed to inform clinical trials and treatment algorithms as novel therapies following front line therapy become available for the r/mCC patient population, which historically has had poor outcomes characterized by poor overall survival under conventional treatments. [4-5]

OBJECTIVE

- This study aimed to understand the real-world treatment patterns and drop-off following 1L r/mCC therapy.

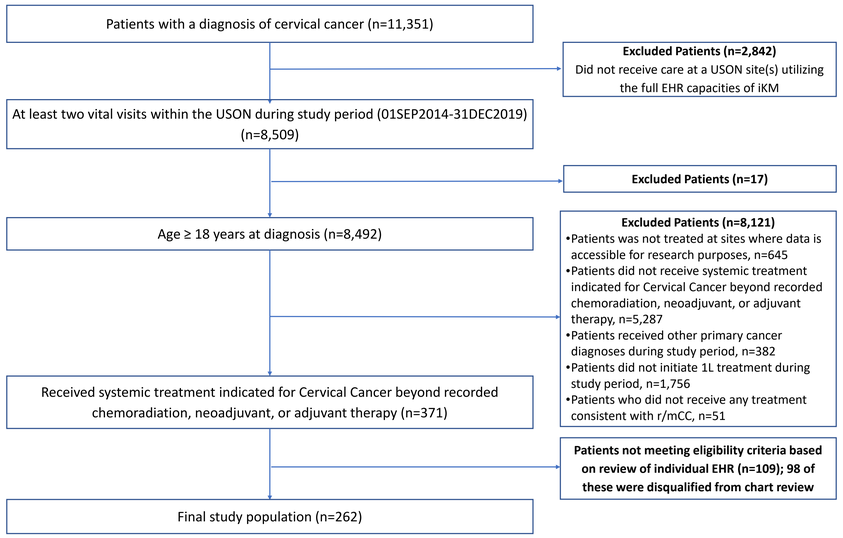
METHODS

Study Design and Data Source
- Retrospective observational cohort study using The US Oncology Network (USON) iKnowMed (iKM) electronic health records (EHRs) and chart review data.

Study Population
- Adult women who received 1L therapy for r/mCC between 01 September 2014 and 31 December 2019.
- The final study population included 262 eligible patients with data accessible for research purposes who were not diagnosed with another primary cancer during the identification period (**Figure 1**). Patients were followed through 31 December 2020 or until the last date of record, whichever occurred first.

Statistical Analysis
- Patient demographic and clinical characteristics, treatment patterns, and clinical outcomes were assessed descriptively.
- Kaplan-Meier methods were used to evaluate time-to-event outcomes, stratified by treatment groups.
  - *Time to treatment discontinuation (TTD)* from the start of 1L to the end of the last regimen of 1L.
  - *Treatment-free interval (TFI)* from the end of the last regimen of 1L to the start of 2L.
- Univariate and multivariable logistic regressions were utilized to assess prognostic factors for patients who advanced to 2L treatment.

Figure 1. Patients initiating 2L r/mCC therapy within USON, 2014-2019



RESULTS

Demographic and Clinical Characteristics
- Mean age at 1L initiation (index) was 53 years, most patients had normal (32.4%) or overweight/obese BMI (22.5%, 29%), and over half (n=143, 54.6%) had ECOG performance status score of ≤1.
- II (B) - IV (A) were the most common FIGO stages (43.1%), and most patients (n=189, 72.1%) had prior radiotherapy or surgery. Histology subgroups were generally reflective of that reported in the literature for cervical malignancies. PD-L1 status was poorly documented.

Treatment Patterns **(Figure 2)**
- Majority of patients in 1L received chemotherapy doublet plus bevacizumab (66%), or chemotherapy doublet alone (24%).
- Nearly half of the patients (48%) completing 1L received 2L therapy.
- Of the patients who did not initiate 2L therapy, n=55 died following 1L, n=31 progressed on 1L but did not receive 2L, and n=23 completed 1L without documentation of progression. Some patients were lost to follow-up (n=25) or had ongoing 1L at the end of the study period (n=3).
- Among patients receiving 2L, there was no consistent treatment of choice in this setting.

Clinical Outcomes **(Figure 3A-3B)**
- Overall median TTD was 3.5 months (IQR 2.1, 4.7 months) from initiation of 1L treatment.
- Median TTD was longest for chemotherapy doublet plus bevacizumab (3.5 months) and shortest for chemotherapy doublet alone (3.0 months).
- Median overall TFI was 2.1 months (IQR 1.0, 7.4 months) from end of 1L to 2L initiation.

RESULTS

Figure 2. Treatment Pattern Sankey Diagram from 1L to 2L

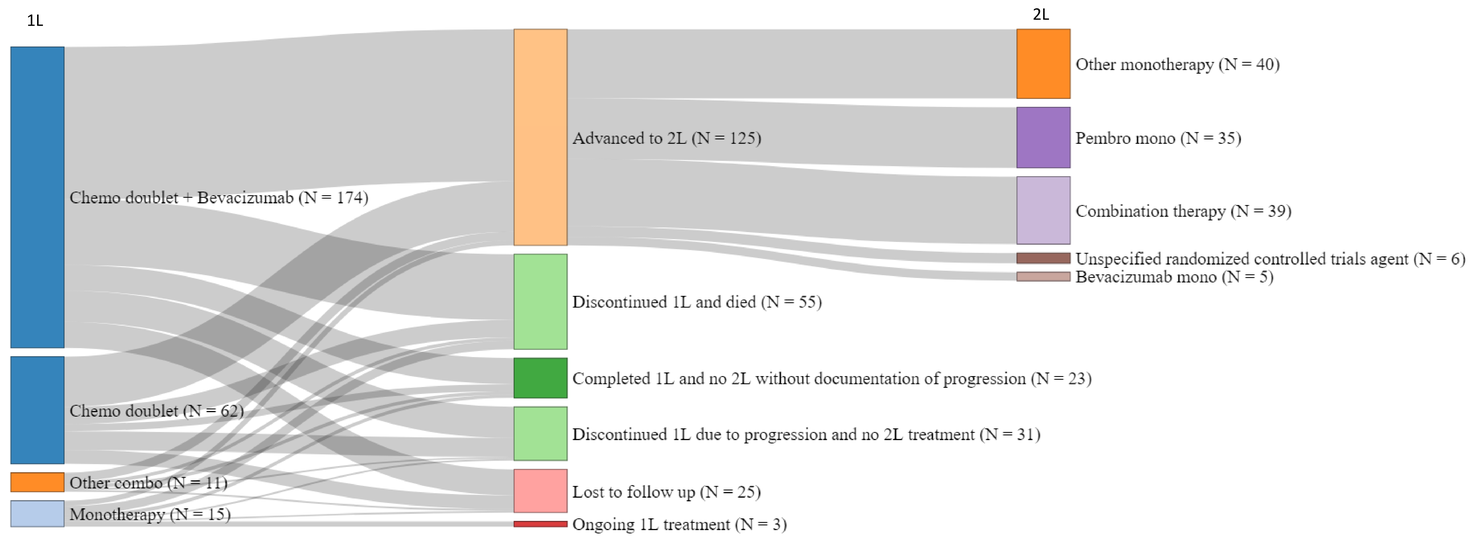
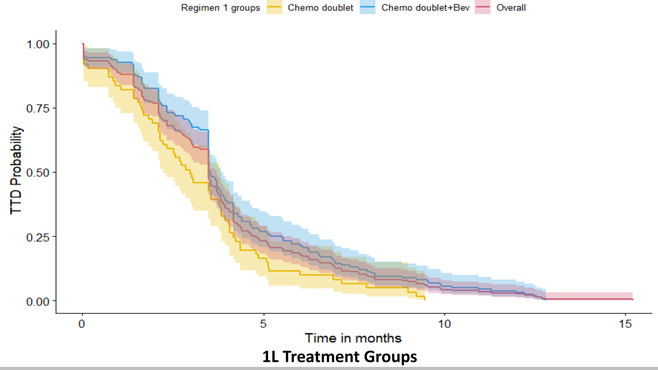


Figure 3A. Kaplan-Meier Analysis for TTD (by 1L Treatment Groups)

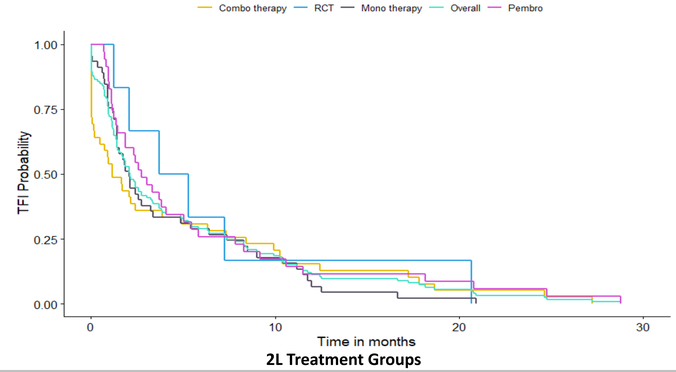


1L Treatment Groups

Variable	Overall*	Chemo doublet	Chemo doublet + bevacizumab
Number of Patients	**233**	**61**	**160**
Mean (SE)**	3.92 (0.18)	3.22 (0.29)	4.26 (0.23)
Median	3.48	2.99	3.53
Q1, Q3	2.10, 4.70	1.64, 4.17	2.33, 5.36

*After removing 29 patients: lost to follow up (N=25), in ongoing 1L treatment (N=3), or had neuroendocrine carcinoma (N=1); **SE: standard errors

Figure 3B. Kaplan-Meier Analysis for TFI (by 2L Treatment Groups)



2L Treatment Groups

Variable	Overall	RCT* agents	Pembrolizumab mono	Other mono	Combo therapy
Number of Patients	125	6	35	45	39
Mean (SE)**	5.20 (0.57)	6.71 (2.68)	5.74 (1.19)	4.45 (0.73)	5.02 (1.16)
Median	2.10	4.50	2.73	2.07	1.15
Q1, Q3	0.95, 7.40	2.07, 7.26	1.15, 7.85	1.18, 7.39	0.03, 8.44

*RCT: randomized controlled trials; **SE: standard errors

Table 4: Assessing Associations by Univariable and Multivariable Logistic Regressions

Variables		Univariable		Multivariable	
Covariate	**Level**	**OR (95% CI)**	**P-value**	**OR (95% CI)**	**P-value**
Age	<50	1		1	
	≥50	1.18 (0.7, 1.99)	0.53	1.84 (.84, 04.04)	0.13
BMI	Normal (BMI 18.5–24.9)	1		1	
	Underweight (BMI<18.5)	1.52 (0.59, 4.09)	0.39	2.25 (0.59, 8.52)	0.23
	Overweight (BMI>24.9)	0.79 (0.45, 1.40)	0.42	2.17 (0.92, 5.12)	0.08
ECOG performance status	0-1	1		1	
	≥2	1.65 (0.75, 3.71)	0.22	1.49 (0.59, 3.74)	0.40
FIGO stages at presentation of cervical cancer	0–II (A)	1		1	
	II (B)–IV (A)	0.86 (0.46, 1.61)	0.64	0.55 (0.23, 1.33)	0.19
	IV (B)	1.46 (0.70, 3.06)	0.31	0.71 (0.23, 2.18)	0.55
	IV (NOS)	1.20 (0.23, 6.39)	0.83	NA	0.98
Numbers of metastatic sites at 1L	0–1	1		1	
	≥2	0.79 (0.46, 1.34)	0.38	0.85 (0.38, 1.92)	0.70
Bevacizumab exposure in 1L	No	1		1	
	Yes	0.78 (0.44, 1.39)	0.40	0.64 (0.27, 1.51)	0.29
Serum creatinine	Normal or Low (≤1.04 mg/dL)	1		1	
	Elevated (>1.04 mg/dL)	2.03 (1.06, 3.96)	0.03	3.04 (1.13, 8.22)	0.03

OR, odds radio; All reported p values were 2-sided, with a significance level of 0.05.

CONCLUSIONS

- Findings confirmed that the majority of r/mCC patients in 1L received current SOC. However, <50% received 2L therapy. Among patients receiving 2L therapy, there was no clear single choice of therapy.
- Real-world patients receiving chemotherapy doublet plus bevacizumab had a longer median TTD vs. chemotherapy doublet alone, consistent with results from the GOG 240 trial.
- We observed numerically longer TFI among patients receiving 2L pembrolizumab or RCT agents, suggesting chemotherapy remains the salvage therapy of choice for patients requiring 2L within a short period of time.
- Additional to serum creatinine, we found directional trend of factors associated with lower likelihood of receiving 2L: abnormal BMI, no prior bevacizumab exposure, worse ECOG score, and earlier disease presentation **(Table 4)**.
- The introduction of novel and more effective therapies will provide important treatment options for r/mCC patients needing subsequent therapy, while optimizing sequence of therapies to maximize treatment outcomes will be key.

REFERENCES

1. NCCN Clinical Practice Guidelines in Oncology. Cervical Cancer, Version 1.2022. 2. Alholm Z, et al. *Gynecol Oncol.* 2021;161(2). 3. Miller DS, et al. *Gynecol Oncol.* 2008;110(1). 4. Tewari KS, et al. *N Engl J Med.* 2014;370(8). 5. FDA approves pembrolizumab 2018.

SPONSORSHIP

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