Poster 16: Incorporation of immunotherapy or biological targeted therapy in primary anti-cancer treatment in gynecologic malignancy

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Topic: Therapeutic trends

Objectives

The landscape of anti-cancer treatment is rapidly evolving due to the development of effective immunotherapy and biological targeted therapy. Recent United States Food and Drug Administration approvals for immunotherapy as well as biological targeted therapy have led to increasing interest and new applications of this novel therapeutic modality for gynecologic cancers. Given the scarcity of real-world practice data, this study assessed temporal trends in utilization of immunotherapy or biological targeted therapy in the initial anti-cancer therapy for gynecologic malignancies in the United States.

Methods

This retrospective cohort study examined the National Cancer Database from 2013-2020. The study population was 7,274,923 patients with 16 different malignancies, including 667,186 patients with 5 gynecologic malignancies (uterus [n=381,077], tubo-ovary [n=154,743], cervix [n=81,666], vulva [n=41,286], and vagina [n=8,414]), 5,773,291 patients from 8 non-gynecologic solid malignancies (breast, lung, colo-rectum, central nervous system, bladder, kidney, pancreas, and liver), and 834,446 patients from 3 hematologic malignancies (lymphoma, leukemia, and myeloma). Utilization rates of immunotherapy or biological targeted therapy were aggregated in each year, and the temporal trend was assessed with linear segmented regression with log-transformation utilizing one-year time increments (National Cancer Institute's Joinpoint Regression Program, version 4.8.0.1). Annual percentage rate increase from 2013-2020 was plotted across the measured malignancy types. University Southern California Institutional Review Board deemed this study exempt due to the use of publicly available deidentified data.

Results

During the study period, immunotherapy or biological targeted therapy was administered as a part of initial anti-cancer treatment in less than 6% of patients with gynecologic malignancies (5.6%, 4.7%, 3.7%, 2.9%, and 0.8% for tubo-ovary, vagina, cervix, vulva, and uterus, respectively). Among non-gynecologic malignancies, 4 malignancies had an immunotherapy or biological targeted therapy utilization rate of more than 6% (16.9%, 11.3%, 9.5%, and 6.2% for bladder, lung, breast, and colo-rectum, respectively). Immunotherapy or biological targeted therapy was frequently incorporated among cases of hematologic malignancy, including 42.9% and 41.4% for lymphoma and myeloma, respectively. From 2013-2020, immunotherapy or biological targeted therapy was increasingly incorporated in the initial anti-cancer treatment for all 5 gynecologic malignancies (all, P-trend < .05; Figure 1A): by 2020, 14.0%, 8.7%, 6.9%, 5.2%, and 2.3% of patients with tubo-ovarian, vaginal, cervical, vulvar, and uterine cancers, respectively, received immunotherapy or biological targeted therapy during the initial anti-cancer treatment. Immunotherapy or biological targeted therapy also increased in all other measured malignancies except breast cancer, but the increasing rates were overall higher in gynecologic malignancies compared to

other malignancies (Figure 1B). Among gynecologic malignancies, uterine cancer, which had the second highest increase among the 16 measured malignancies, had more than a 50% annual increase in immunotherapy or biological targeted therapy use during initial anti-cancer treatment (annual percentage rate increase 55.0, 95% confidence interval 46.6-64.0, P < .001). This was followed by tubo-ovarian cancer (annual percentage rate increase 38.4, 95% confidence interval 24.9-53.4, P < .001).

Conclusions

The results of current, nationwide, real-world practice data suggest that utilization of immunotherapy or biological targeted therapy for gynecologic malignancy, especially in uterine and tubo-ovarian cancers, is rising in the United States with rapid incorporation into initial anti-cancer treatment. This increasing uptake of immunotherapy or biological targeted therapy is likely a reflection of mounting data from clinical trials that led to the United States Food and Drug Administration approvals. Limitations of this study include a lack of information on immunotherapy or biological targeted therapy details (type, duration, and indication), causes of increasing utilization, tumor type-specific evaluations, recurrence data, and quality-of-life metrics. Despite these limitations, the recent increase in immunotherapy or biological targeted therapy for gynecologic cancer treatment observed in this analysis calls for further evaluation including oncologic outcome, toxicity, and quality-of-life metrics in real-world practice.

Abstract Table or Graph

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