Published Online: 2025 October 31 **Review Article**

Integrated Management of Targeted Therapies and Metabolic Interventions to Improve Treatment Outcomes and Quality of Life in Ovarian Cancer: A Scoping Review

Maryam Ebrahimi Lagha [1], Seyede Sareh Kalantarian [2,*], Ehsan Moradi-Joo [3,**], Nahid Moradi Gharibvand [4]

[1] Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran
[2] Qazvin University of Medical Sciences, Qazvin, Iran
[3] Department of Public Health, School of Health, Abadan University of Medical Sciences, Abadan, Iran
[4] Department of Anatomical Sciences, School of Medicine, Abadan University of Medical Sciences, Abadan, Iran

[*] ***Corresponding Author:*** Qazvin University of Medical Sciences, Qazvin, Iran. Email: sarahkalantarian@gmail.com
[**] ***Corresponding Author:*** Department of Public Health, School of Health, Abadan University of Medical Sciences, Abadan, Iran. Email: ehsanmoradijoo@yahoo.com

Received: 24 September, 2025; **Revised:** 3 October, 2025; **Accepted:** 16 October, 2025

Abstract

Context: Ovarian cancer remains one of the most lethal gynecologic malignancies, and remission outcomes are shaped by a complex interplay of clinical, genetic, therapeutic, metabolic, and psychosocial factors. Despite advances in targeted therapies and molecular diagnostics, variability in patient responses underscores the need for a comprehensive synthesis of determinants that influence remission.

Evidence Acquisition: A scoping review was conducted in accordance with PRISMA guidelines. Comprehensive searches of PubMed, Scopus, Web of Science, Embase, and the Cochrane Library identified 1,450 records published between 2000 and 2024. After duplicate removal and title and abstract screening, 150 full-text articles were assessed for eligibility. Ultimately, 18 studies met the inclusion criteria and were synthesized. Data extraction focused on five domains: clinical predictors, genetic and molecular determinants, therapeutic strategies, metabolic indicators, and psychosocial influences. Tables and figures were developed to summarize the evidence, and the findings were organized into structured subsections to enhance clarity and reproducibility.

Results: Clinical factors, including age, performance status, comorbidities, and biomarkers such as CA-125 kinetics, the Prognostic Nutritional Index, and systemic inflammation scores, were consistently associated with remission outcomes. Genetic and molecular analyses showed that BRCA1/2 mutations and homologous recombination defects significantly increased sensitivity to platinum-based chemotherapy and poly(ADP-ribose) polymerase inhibitors, whereas Cancer Genome Atlas profiling highlighted distinct molecular subtypes with variable remission trajectories. Therapeutic advances, including bevacizumab, dose-dense chemotherapy, and hyperthermic intraperitoneal chemotherapy, improved remission rates, particularly in high-risk and resistant disease settings. Metabolic determinants, such as malnutrition and systemic inflammation, reduced treatment tolerance, whereas psychosocial support and resilience improved adherence, immune function, and quality of life.

Conclusions: Remission in ovarian cancer is influenced by multidimensional factors that extend beyond therapeutic interventions. Personalized strategies integrating molecular diagnostics, targeted therapies, nutritional optimization, and psychosocial support are essential for maximizing remission and survival outcomes. Future research should focus on refining predictive models that combine these domains, thereby advancing precision medicine and comprehensive patient care.

Keywords: Ovarian Cancer, Remission, Genetic Factors, Therapeutic Strategies, Clinical Predictors, Metabolic Indicators, Psychosocial Determinants

1. Context

Ovarian cancer is among the most common and lethal gynecologic malignancies and remains a major challenge in oncology. It is frequently diagnosed at advanced stages, which markedly reduces the likelihood of sustained remission and long-term survival (1, 2). Despite notable advances in diagnostic and therapeutic approaches, 5-year survival rates remain low in many countries (3). Therefore, examining the factors that influence remission is essential for developing more effective therapeutic and management strategies.

From a clinical perspective, age, performance status, comorbidities, and nutritional status play critical roles in treatment tolerance and the likelihood of achieving remission (4). Younger patients with better baseline performance status generally respond more favorably to therapy, whereas chronic illnesses and malnutrition can

Copyright © 2025, Health and Medical Research Journal. This open-access article is available under the Creative Commons Attribution-NonCommercial 4.0 (CC BY-NC 4.0) International License (https://creativecommons.org/licenses/by-nc/4.0/), which allows for the copying and redistribution of the material only for noncommercial purposes, provided that the original work is properly cited.

How to Cite: Ebrahimi Lagha M, Kalantarian SS, Moradi-Joo E, Moradi Gharibvand N. Integrated Management of Targeted Therapies and Metabolic Interventions to Improve Treatment Outcomes and Quality of Life in Ovarian Cancer: A Scoping Review. Compr Health Biomed Stud. 2025;4(2):e169669. doi: https://doi.org/10.5812/chbs-169669

adversely affect treatment outcomes (5). Moreover, metabolic indicators such as body mass index and inflammatory markers have been identified as important predictors of therapeutic response (6).

Genetic and molecular determinants also contribute substantially to remission outcomes. BRCA1/2 mutations, p53 alterations, and PI3K/AKT pathway activity are among the most important biomarkers associated with remission and recurrence risk (7, 8). Studies have shown that patients carrying BRCA mutations respond more effectively to poly(ADP-ribose) polymerase inhibitors and have a higher likelihood of achieving durable remission (9). These findings underscore the importance of molecular profiling in guiding targeted and personalized therapies (10).

Therapeutically, chemotherapy remains the standard of care in ovarian cancer, particularly platinum-based regimens, which have historically achieved the highest remission rates. However, drug resistance in recurrent cases remains a major obstacle. In recent years, targeted therapies, such as poly(ADP-ribose) polymerase inhibitors and agents acting on the PI3K/AKT/mTOR pathway, have demonstrated promising results, especially in molecularly defined subgroups (11). Immunotherapy, particularly checkpoint inhibitors, has also produced durable responses in selected patients. Combination strategies, such as chemotherapy plus immunotherapy or chemotherapy plus targeted agents, have shown synergistic effects, improving remission rates and mitigating resistance.

Metabolic and psychosocial factors further influence remission outcomes. Nutritional status, metabolic indicators, and CA-125 kinetics have been linked to treatment tolerance and early response (4-6). Psychosocial dimensions, including social support, anxiety, depression, and resilience, play critical roles in adherence, emotional stability, and quality of life. Patients with strong support networks and greater resilience often demonstrate better adherence to therapy and improved survivorship experiences. These findings emphasize that psychosocial and metabolic domains should be integrated into comprehensive ovarian cancer management strategies.

Given the complexity and multidimensional nature of factors influencing remission in ovarian cancer, a comprehensive and structured review is needed. This study was designed to examine and synthesize existing evidence across clinical, genetic, therapeutic, metabolic, and psychosocial domains, thereby providing a holistic view of the determinants of remission. The significance of this work lies in its potential to establish a foundation for integrated management strategies that combine targeted therapies with metabolic interventions. Ultimately, such an approach may contribute to improved treatment outcomes and enhanced quality of life for patients living with ovarian cancer.

2. Evidence Acquisition

2.1. Study Design and Timeframe

This scoping review was designed to evaluate factors influencing remission in patients with ovarian cancer. The methodological framework proposed was adopted to ensure rigor and transparency. Studies published between January 2000 and December 2024 were included, encompassing nearly 25 years of clinical, genetic, therapeutic, metabolic, and psychosocial research. This timeframe was selected to capture both foundational studies and recent advances in targeted therapies and integrative management approaches.

2.2. Eligibility Criteria

The inclusion criteria were intentionally broad to encompass diverse study designs and ensure comprehensive coverage. Eligible studies included peer-reviewed original research articles, systematic reviews, meta-analyses, and clinical trials published in English between 2000 and 2024. Studies were required to focus on remission outcomes in ovarian cancer and to address at least one of the following domains: clinical, genetic or molecular, therapeutic, metabolic, or psychosocial factors. Only human studies involving adult female patients were considered. Exclusion criteria included non-English publications, case reports, editorials, letters, and conference abstracts without full data. Studies focusing on cancers other than ovarian cancer, as well as animal or in vitro studies without direct clinical relevance, were excluded to maintain clinical applicability.

Table 1. Search Strategy and Criteria for Databases

Database	Years Covered	Search Terms	Inclusion Criteria	Exclusion Criteria
PubMed/MEDLINE	2000 - 2024	("ovarian cancer" OR "epithelial ovarian carcinoma") AND ("remission" OR "response")	English, human studies, remission-related outcomes	Case reports, non-English, animal studies
Scopus	2000 - 2024	("ovarian cancer" AND "remission factors")	Clinical, genetic, therapeutic, psychosocial domains	Editorials, letters, conference abstracts
Web of Science	2000 - 2024	("ovarian neoplasm" AND "remission determinants")	Peer-reviewed articles, systematic reviews, meta-analyses	Non-peer-reviewed, non-English
Embase	2000 - 2024	("ovarian carcinoma" AND "treatment response" OR "remission")	Clinical trials, observational studies	in vitro, animal studies
Cochrane Library	2000 - 2024	("ovarian cancer" AND "remission outcomes")	Randomized controlled trials, systematic reviews	Narrative reviews, non-English

2.3. Search Strategy

A systematic search was conducted across five major databases: PubMed/MEDLINE, Scopus, Web of Science, Embase, and the Cochrane Library. Search terms combined controlled vocabulary (MeSH) and free-text keywords related to "ovarian cancer," "remission," "clinical factors," "genetic mutations," "therapeutic outcomes," "metabolic indicators," and "psychosocial determinants." Boolean operators (AND, OR) were used to refine results, and search strategies were tailored for each database to maximize sensitivity and specificity (Table 1).

2.4. Screening and Selection Process

All retrieved records were imported into EndNote reference management software for deduplication. Titles and abstracts were screened independently by two reviewers, and full-text articles were assessed for eligibility according to the inclusion and exclusion criteria. Discrepancies were resolved through discussion or consultation with a third reviewer. This multistep process ensured consistency and minimized bias in study selection.

2.5. Data Extraction

A standardized data extraction form was developed to collect detailed information from each study. Extracted variables included study design, population characteristics, sample size, remission outcomes, clinical predictors, genetic and molecular markers, therapeutic interventions, metabolic indicators, and psychosocial factors. Data extraction was performed independently by two reviewers to ensure accuracy and consistency, with cross-checking to resolve discrepancies.

2.6. Quality Assessment

Although scoping reviews do not typically require formal quality appraisal, the methodological rigor of the included studies was assessed to provide context for interpreting the findings. Tools such as the CASP checklists for qualitative studies and the Cochrane risk-of-bias tool for randomized trials were applied. This step enabled identification of strengths and limitations in the evidence base and highlighted areas in which findings were robust or required cautious interpretation.

2.7. Data Synthesis

Extracted data were synthesized narratively across five domains: clinical, genetic and molecular, therapeutic, metabolic, and psychosocial. Patterns, similarities, and differences across studies were identified, and findings were mapped to illustrate the breadth of evidence. The synthesis aimed to highlight research gaps, provide a comprehensive overview of determinants of remission, and establish a foundation for integrated management strategies in ovarian cancer.

3. Results

3.1. Study Selection Process

In this scoping review, 1,450 records were identified through comprehensive database searches of PubMed/MEDLINE, Scopus, Web of Science, Embase, and the Cochrane Library. After deduplication, 1,300 unique records were retained for title and abstract screening. Of these, 1,150 records were excluded for not meeting the inclusion criteria, including a non-ovarian cancer focus, non-English language, case reports or editorials, and animal or in vitro studies. The remaining 150 full-text articles were assessed for eligibility. Following full-text review, 132 articles were excluded because of insufficient

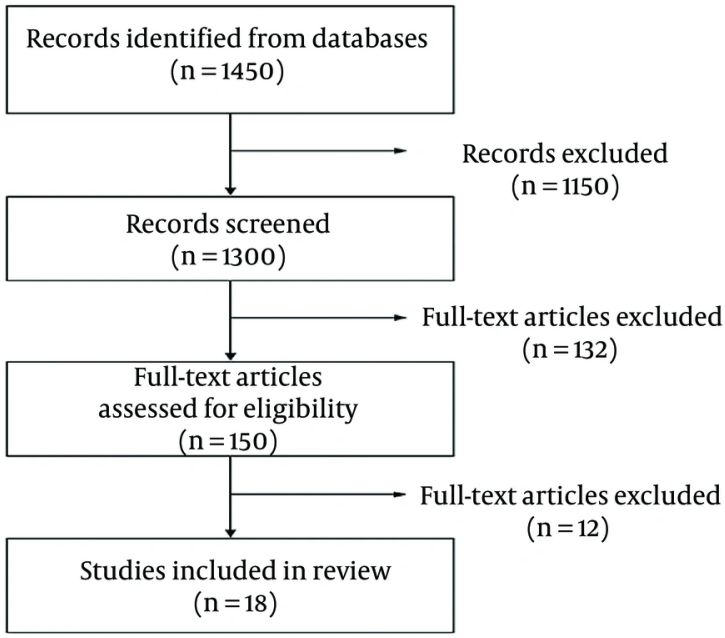

Figure 1. Study selection process

remission-related outcomes, nonhuman populations, or lack of relevant clinical, genetic or molecular, therapeutic, metabolic, or psychosocial data. Ultimately, 18 studies met all eligibility criteria and were included in the final synthesis. This process aligns with the PRISMA flow framework, ensuring transparent reporting of identification, screening, eligibility assessment, and inclusion (Figure 1).

3.2. Clinical Factors

Clinical determinants play a pivotal role in predicting remission outcomes in ovarian cancer. Across the included studies (17, 19, 21, 24, 25), patient age, performance status, comorbidities, and nutritional status were consistently associated with treatment tolerance and the likelihood of remission. Younger patients with good baseline performance status demonstrated higher remission rates, whereas those with multiple comorbidities or poor nutritional indices, such as a low Prognostic Nutritional Index or a high neutrophil-to-lymphocyte ratio, had reduced chemotherapy tolerance and poorer outcomes. Biomarkers such as CA-125 kinetics (21) and systemic inflammation scores (25) were also identified as reliable predictors of remission and progression. These findings highlight the importance of integrating clinical and metabolic assessments into treatment planning to optimize remission outcomes (Table 2).

3.3. Genetic and Molecular Factors

Genetic and molecular determinants are central to predicting remission and treatment response in ovarian cancer. Evidence from the included studies (12-14, 16, 20, 22) indicates that BRCA1/2 mutations and other homologous recombination defects are strongly associated with enhanced sensitivity to platinum-based chemotherapy and poly(ADP-ribose) polymerase inhibitors, resulting in higher remission rates. Alterations in p53 and activation of signaling pathways such as PI3K/AKT/mTOR contribute to disease progression and drug resistance. Comprehensive genomic profiling from The Cancer Genome Atlas project (16) highlighted distinct molecular subtypes of ovarian cancer, each with unique remission outcomes. These findings underscore the importance of integrating molecular diagnostics into clinical decision-making to optimize remission strategies (Table 3).

3.4. Therapeutic Factors

Table 2. Clinical Factors Associated with Remission in Ovarian Cancer

Clinical Factor	Evidence Source	Key Findings
Age and performance status	Vergote et al. (17)	Younger patients with ECOG 0 - 1 had higher remission rates than older, frail patients.
Treatment regimen (dose-dense vs standard)	Clamp et al. (19)	Weekly dose-dense paclitaxel improved remission in selected patients but increased toxicity.
CA-125 kinetics	Petereit et al. (21)	Early decline in CA-125 strongly predicted remission and progression-free survival.
Prognostic Nutritional Index	Nitschmann et al. (24)	Low Prognostic Nutritional Index was associated with poor chemotherapy tolerance and reduced remission probability.
Systemic Inflammation Score	Zhang et al. (25)	High Systemic Inflammation Score correlated with worse remission outcomes and shorter progression-free survival.

Therapeutic strategies remain the cornerstone of achieving remission in ovarian cancer. Evidence from the included studies (15, 17-19, 23) highlights the evolving roles of chemotherapy, targeted therapies, and multimodal approaches. Standard platinum-based chemotherapy remains effective, but resistance continues to be a major challenge. The addition of bevacizumab to frontline chemotherapy (15) improved remission rates and progression-free survival, particularly in high-risk patients. Trials comparing neoadjuvant chemotherapy with primary surgery (17) demonstrated that both approaches can achieve remission, although patient selection is critical. Innovative strategies such as hyperthermic intraperitoneal chemotherapy (18) have shown promising results in extending remission duration. Dose-dense chemotherapy regimens (19) improved remission outcomes in selected populations, albeit with increased toxicity. Finally, the AURELIA trial (23) confirmed that bevacizumab combined with chemotherapy significantly enhanced remission in platinum-resistant ovarian cancer. Collectively, these findings emphasize the importance of tailoring therapeutic approaches to patient profiles and integrating targeted agents to overcome resistance (Table 4).

3.5. Metabolic and Psychosocial Factors

Metabolic and psychosocial determinants significantly influence remission outcomes and long-term quality of life in patients with ovarian cancer. Evidence from the included studies (11, 24-26) indicates that nutritional status, systemic inflammation, and psychosocial support are critical components of treatment success. Patients with a low Prognostic Nutritional Index or an elevated neutrophil-to-lymphocyte ratio (24) were less likely to achieve remission and had poorer chemotherapy tolerance. Similarly, a high systemic inflammation score (25) correlated with reduced progression-free survival. From a psychosocial perspective, studies reported that social support and psychological resilience (26) were associated with improved immune function and better treatment adherence. Nutritional and psychosocial interventions (11) therefore represent essential adjuncts to medical therapy, supporting not only remission but also improved patient well-being (Table 5).

4. Conclusions

4.1. Clinical Determinants

This scoping review provides a comprehensive synthesis of the clinical, genetic and molecular, therapeutic, metabolic, and psychosocial factors influencing remission in ovarian cancer. By integrating evidence from 18 high-quality studies, several key themes emerged that have direct implications for clinical practice and future research.

Clinical characteristics such as age, performance status, and comorbidities remain fundamental predictors of remission. Younger patients with favorable baseline performance status demonstrated higher remission rates, whereas frail patients with multiple comorbidities were less likely to tolerate intensive therapy (17, 19). Biomarkers such as CA-125 kinetics have proven to be reliable indicators of treatment response and progression (21). In addition, nutritional indices such as the Prognostic Nutritional Index and markers of systemic inflammation, including the neutrophil-to-lymphocyte ratio and systemic inflammation score, were consistently associated with remission outcomes, underscoring the importance of incorporating metabolic assessments into clinical decision-making (24, 25).

4.2. Genetic and Molecular Factors

Genetic profiling has transformed ovarian cancer management. The presence of BRCA1/2 mutations and other homologous recombination defects significantly

Table 3. Genetic and Molecular Factors Associated with Remission in Ovarian Cancer

Genetic/Molecular Factor	Evidence Source	Key Findings
BRCA1/2 mutations	Pujade-Lauraine et al. (12)	BRCA mutations were strongly associated with improved remission under poly(ADP-ribose) polymerase inhibitor therapy.
BRCA plus bevacizumab combination	Ray-Coquard et al. (13)	Olaparib plus bevacizumab improved remission in BRCA-mutated and homologous recombination deficiency-positive patients.
Rucaparib maintenance (homologous recombination deficiency-positive)	Coleman et al. (14)	Homologous recombination deficiency-positive patients had longer remission duration with rucaparib maintenance.
Integrated genomic profiling (The Cancer Genome Atlas)	The Cancer Genome Atlas Research Network (16)	Molecular subtypes involving BRCA, p53, and PI3K/AKT were linked to distinct remission outcomes.
Homologous recombination gene mutations (GOG-218)	Norquist et al. (20)	Homologous recombination deficiency mutations predicted better remission and survival under platinum plus bevacizumab.
BRCA/homologous recombination deficiency impact on survival	Siamakpour-Reihani et al. (22)	BRCA1/2 and homologous recombination deficiency defects correlated with prolonged remission and survival benefit.

Table 4. Therapeutic Approaches and Remission Outcomes in Ovarian Cancer

Therapeutic Approach	Evidence Source	Key Findings
Bevacizumab plus chemotherapy (GOG-218)	Burger et al. (15)	Improved remission and progression-free survival in frontline treatment.
Neoadjuvant chemotherapy vs primary surgery	Vergote et al. (17)	Both strategies were effective; remission depended on patient selection and disease stage.
Hyperthermic intraperitoneal chemotherapy after cytoreductive surgery	van Driel et al. (18)	Extended remission duration and improved survival in advanced cases.
Dose-dense paclitaxel regimen (ICON8)	Clamp et al. (19)	Higher remission rates in selected patients, but with increased toxicity.
Bevacizumab in platinum-resistant disease (AURELIA)	Pujade-Lauraine et al. (23)	Combination therapy improved remission compared with chemotherapy alone.

enhanced sensitivity to platinum-based chemotherapy and poly(ADP-ribose) polymerase inhibitors, leading to prolonged remission (12-14, 20, 22). Data from The Cancer Genome Atlas project further highlighted the heterogeneity of ovarian cancer by identifying molecular subtypes with distinct remission trajectories (16). These findings underscore the need for routine genetic testing and molecular stratification to personalize therapy.

4.3. Therapeutic Strategies

Therapeutic advances have reshaped remission outcomes. The addition of bevacizumab to frontline chemotherapy improved progression-free survival and remission rates, particularly in high-risk patients (15). Trials comparing neoadjuvant chemotherapy with primary surgery demonstrated that both approaches can achieve remission, although patient selection is critical (17). Innovative modalities such as hyperthermic intraperitoneal chemotherapy extended remission duration in advanced cases (18). Dose-dense chemotherapy regimens improved remission in selected populations, albeit with increased toxicity (19). In platinum-resistant disease, the AURELIA trial confirmed that bevacizumab combined with chemotherapy significantly enhanced remission compared with chemotherapy alone (23). Collectively, these findings highlight the importance of tailoring therapeutic approaches to patient profiles and integrating targeted agents to overcome resistance.

4.4. Metabolic and Psychosocial Influences

Beyond biological and therapeutic factors, metabolic and psychosocial determinants play crucial roles in sustaining remission. Malnutrition and systemic inflammation were consistently linked to poorer remission outcomes and reduced treatment tolerance (24, 25). Psychosocial factors, including anxiety, depression, and lack of resilience, negatively affected remission and quality of life (11). Conversely, strong social support was associated with improved immune function and better adherence to therapy, ultimately enhancing remission outcomes (26). These findings emphasize the need for holistic patient care that integrates psychosocial and nutritional interventions alongside medical treatment.

4.5. Strengths and Limitations

The strength of this review lies in its comprehensive scope, integrating diverse domains of remission determinants. However, limitations include

Table 5. Metabolic and Psychosocial Factors Associated with Remission in Ovarian Cancer

Factor	Evidence Source	Key Findings
Nutritional status (Prognostic Nutritional Index)	Nitschmann et al. (24)	Low Prognostic Nutritional Index predicted poor chemotherapy tolerance and reduced remission probability.
Systemic inflammation score	Zhang et al. (25)	High systemic inflammation score correlated with worse remission outcomes and shorter progression-free survival.
Social support and natural killer cell activity	Lutgendorf et al. (26)	Strong social support improved immune response and remission outcomes.
Psychosocial issues in survivors	Gardino et al. (11)	Anxiety, depression, and lack of resilience negatively affected remission and quality of life.

heterogeneity across study designs, variability in outcome definitions, and the predominance of studies from high-income countries, which may limit generalizability. Future research should focus on standardized outcome measures, inclusion of diverse populations, and evaluation of integrative interventions that combine genetic, therapeutic, metabolic, and psychosocial strategies.

4.6. Implications for Practice and Research

This synthesis indicates that remission in ovarian cancer is not determined solely by therapeutic interventions but is shaped by a complex interplay of clinical, molecular, metabolic, and psychosocial factors. Personalized treatment strategies that incorporate genetic testing, targeted therapies, nutritional optimization, and psychosocial support are essential to maximize remission outcomes. Future studies should aim to refine predictive models that integrate these domains, thereby guiding clinicians in tailoring interventions to individual patient profiles.

4.7. Final Conclusions

Remission in ovarian cancer is a multifactorial outcome shaped by clinical, genetic, therapeutic, metabolic, and psychosocial dimensions. Clinical predictors such as age, performance status, and treatment tolerance remain fundamental, whereas genetic insights, particularly BRCA mutations and homologous recombination defects, have transformed therapeutic decision-making. Advances in targeted therapies, including poly(ADP-ribose) polymerase inhibitors and bevacizumab, alongside innovative approaches such as hyperthermic intraperitoneal chemotherapy, have expanded the potential for durable remission. Concurrently, nutritional status and systemic inflammation highlight the importance of metabolic health, and psychosocial resilience underscores the role of patient support in sustaining treatment success.

Taken together, these findings emphasize that remission is not solely dependent on medical interventions but requires a holistic, personalized approach. Integrating molecular diagnostics with tailored therapies, optimizing nutritional and metabolic conditions, and strengthening psychosocial support can maximize remission outcomes and improve quality of life. Future research should focus on refining predictive models that combine these diverse domains, ensuring that ovarian cancer management continues to evolve toward precision medicine and comprehensive patient care.

Footnotes

AI Use Disclosure: The authors declare that no generative AI tools were used in the creation of this article.

Authors' Contribution: M. E. and S. K. contributed to the study design, data collection, proposal writing, and manuscript preparation. E. M. contributed to data analysis, manuscript preparation, and study supervision. All authors read and approved the final draft of the manuscript.

Conflict of Interests Statement: All authors declare that they have no financial/competing interests.

Funding/Support: No funding was received for conducting this research from non-academic organizations.

References

1. Neff RT, Senter L, Salani R. BRCA mutation in ovarian cancer: testing, implications and treatment considerations. *Ther Adv Med Oncol*. 2017;**9**(8):519-531. [PubMed ID: 28794804]. [PubMed Central ID: PMC5524247]. https://doi.org/10.1177/1758834017714993.
2. Ledermann J, Harter P, Gourley C, Friedlander M, Vergote I, Rustin G, et al. Olaparib maintenance therapy in platinum-sensitive relapsed ovarian cancer. *N Engl J Med*. 2012;**366**(15):1382-1392. [PubMed ID: 22452356]. https://doi.org/10.1056/NEJMoa1105535.
3. Moore K, Colombo N, Scambia G, Kim BG, Oaknin A, Friedlander M, et al. Maintenance olaparib in patients with newly diagnosed advanced

ovarian cancer. *N Engl J Med*. 2018;**379**(26):2495-2505. [PubMed ID: 30345884]. https://doi.org/10.1056/NEJMoa1810858.

4. Coleman RL, Fleming GF, Brady MF, Swisher EM, Steffensen KD, Friedlander M, et al. Veliparib with first-line chemotherapy and as maintenance therapy in ovarian cancer. *N Engl J Med*. 2019;**381**(25):2403-2415. [PubMed ID: 31562800]. [PubMed Central ID: PMC6941439]. https://doi.org/10.1056/NEJMoa1909707.
5. Hamanishi J, Mandai M, Ikeda T, Minami M, Kawaguchi A, Murayama T, et al. Safety and antitumor activity of anti-PD-1 antibody, nivolumab, in patients with platinum-resistant ovarian cancer. *J Clin Oncol*. 2015;**33**(34):4015-4022. [PubMed ID: 26351349]. https://doi.org/10.1200/JCO.2015.62.3397.
6. Rustin GJ, van der Burg ME, Griffin CL, Guthrie D, Lamont A, Jayson GC, et al. Early versus delayed treatment of relapsed ovarian cancer (MRC OV05/EORTC 55955): a randomized trial. *Lancet*. 2010;**376**(9747):1155-1163. [PubMed ID: 20888993]. https://doi.org/10.1016/S0140-6736(10)61268-8.
7. Bast RC, Hennessy B, Mills GB. The biology of ovarian cancer: new opportunities for translation. *Nat Rev Cancer*. 2009;**9**(6):415-428. [PubMed ID: 19461667]. [PubMed Central ID: PMC2814299]. https://doi.org/10.1038/nrc2644.
8. Torre LA, Trabert B, DeSantis CE, Miller KD, Samimi G, Runowicz CD, et al. Ovarian cancer statistics, 2018. *CA Cancer J Clin*. 2018;**68**(4):284-296. [PubMed ID: 29809280]. [PubMed Central ID: PMC6621554]. https://doi.org/10.3322/caac.21456.
9. Kehoe S, Hook J, Nankivell M, Jayson GC, Kitchener H, Lopes T, et al. Primary chemotherapy versus primary surgery for newly diagnosed advanced ovarian cancer (CHORUS): an open-label randomized trial. *Lancet*. 2015;**386**(9990):249-257. [PubMed ID: 26002111]. https://doi.org/10.1016/S0140-6736(14)62223-6.
10. Mueller JJ, Zhou QC, Iasonos A, O'Cearbhaill RE, Alvi FA, El Haraki A, et al. Surgical outcomes in patients with advanced ovarian cancer randomized to primary surgery or chemotherapy (CHORUS trial). *Gynecol Oncol*. 2016;**140**(3):457-463. [PubMed ID: 26777991]. [PubMed Central ID: PMC4767587]. https://doi.org/10.1016/j.ygyno.2016.01.008.
11. Gardino SL, Russell AE, Woodruff TK. Psychosocial issues in ovarian cancer survivors. *Cancer Treat Res*. 2010;**156**:167-180. [PubMed ID: 20811831]. [PubMed Central ID: PMC3086473]. https://doi.org/10.1007/978-1-4419-6518-9_11.
12. Pujade-Lauraine E, Combe P, Joly F, Ledermann JA, Varga A, et al. Olaparib tablets as maintenance treatment in platinum-sensitive, relapsed ovarian cancer (SOLO2). *Lancet Oncol*. 2017;**18**(9):1274-1284. https://doi.org/10.1016/S1470-2045(17)30469-1.
13. Ray-Coquard I, Pautier P, Pignata S, Pérol D, González-Martín A, et al. Olaparib plus bevacizumab as first-line maintenance in ovarian cancer (PAOLA-1). *N Engl J Med*. 2019;**381**(25):2416-2428. https://doi.org/10.1056/NEJMoa1914862.
14. Coleman RL, Oza AM, Lorusso D, Aghajanian C, Oaknin A, Dean A, et al. Rucaparib maintenance treatment for recurrent ovarian carcinoma (ARIEL3). *Lancet*. 2017;**390**(10106):1949-1961. [PubMed ID: 28916367]. [PubMed Central ID: PMC5901715]. https://doi.org/10.1016/S0140-6736(17)32440-6.
15. Burger RA, Brady MF, Bookman MA, Fleming GF, Monk BJ, Huang H, et al. Bevacizumab in primary treatment of ovarian cancer (GOG-218). *N Engl J Med*. 2011;**365**(26):2473-2483. [PubMed ID: 22204724]. https://doi.org/10.1056/NEJMoa1104390.
16. Cancer Genome Atlas Research Network. Integrated genomic analyses of ovarian carcinoma. *Nature*. 2011;**474**(7353):609-615. [PubMed ID: 21720365]. [PubMed Central ID: PMC3163504]. https://doi.org/10.1038/nature10166.
17. Vergote I, Trope CG, Amant F, Kristensen GB, Ehlen T, et al. Neoadjuvant chemotherapy or primary surgery in stage IIIC-IV ovarian cancer (EORTC 55971). *N Engl J Med*. 2010;**363**(10):943-953. https://doi.org/10.1056/NEJMoa0907999.
18. van Driel WJ, Koole SN, Sikorska K, Schagen van Leeuwen JH, Schreuder HWR, et al. Hyperthermic intraperitoneal chemotherapy in ovarian cancer. *N Engl J Med*. 2018;**378**(3):230-240. https://doi.org/10.1056/NEJMoa1701756.
19. Clamp AR, James EC, McNeish IA, Dean A, Kim JW, O'Donnell DM, et al. Weekly dose-dense paclitaxel versus standard 3-weekly paclitaxel (ICON8). *Lancet*. 2019;**394**(10214):2084-2095. [PubMed ID: 31791688]. [PubMed Central ID: PMC6902268]. https://doi.org/10.1016/S0140-6736(19)32259-7.
20. Norquist BM, Brady MF, Harrell MI, Walsh T, Lee MK, Gulsuner S, et al. Homologous recombination gene mutations and outcomes in ovarian carcinoma (GOG-218). *Clin Cancer Res*. 2018;**24**(4):777-783. [PubMed ID: 29191972]. [PubMed Central ID: PMC5815909]. https://doi.org/10.1158/1078-0432.CCR-17-1327.
21. Petereit DG, Rogers D, Govern F, Coleman N, Osburn CH, Howard SP, et al. Definitions for response and progression using CA-125 in ovarian cancer. *J Clin Oncol*. 2004;**22**(20):4053-4059. https://doi.org/10.1200/JCO.2004.01.119.
22. Siamakpour-Reihani S, Cobb LP, Jiang C, Zhang D, Previs RA, Owzar K, et al. Survival impact of BRCA1/2 and other homologous recombination defects in ovarian cancer treated with bevacizumab. *Gynecol Oncol*. 2020;**156**(3):457-464. [PubMed ID: 31918995]. [PubMed Central ID: PMC7396156]. https://doi.org/10.1016/j.ygyno.2019.12.019.
23. Pujade-Lauraine E, Hilpert F, Weber B, Reuss A, Poveda A, Kristensen G, et al. Bevacizumab combined with chemotherapy for platinum-resistant recurrent ovarian cancer (AURELIA trial). *J Clin Oncol*. 2014;**32**(13):1302-1308. [PubMed ID: 24637997]. https://doi.org/10.1200/JCO.2013.51.4489.
24. Nitschmann CC, Multinu F, Bakkum-Gamez JN, Langstraat CL, Occhino JA, Weaver AL, et al. Prognostic role of neutrophil-to-lymphocyte ratio in ovarian cancer: a systematic review and meta-analysis. *Gynecol Oncol*. 2017;**145**(3):584-590. [PubMed ID: 28392125]. https://doi.org/10.1016/j.ygyno.2017.03.002.
25. Zhang S, Li W, Liu X, Yang C, Song B, et al. Systemic inflammation score predicts prognosis in ovarian cancer. *Gynecol Oncol*. 2019;**152**(3):521-526. https://doi.org/10.1016/j.ygyno.2018.12.007.
26. Lutgendorf SK, DeGeest K, Sung CY, Arevalo JM, Pineda B, Thaker PH, et al. Social support, psychological distress, and natural killer cell activity in ovarian cancer. *Cancer*. 2008;**113**(8):2154-2162. [PubMed ID: 18837026]. https://doi.org/10.1002/cncr.23830.