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The Role of Laparoscopic Triage in the Management of Advanced Ovarian Cancer: A Review of Literature

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Abbreviations:
ASCO; American Society of Clinical Oncology;
ESGO; European Society of Gynaecological Oncology;
ESMO: European Society for Medical Oncology;
NCCN: National Comprehensive Cancer Network;
RSOG: Romanian Society of Obstetrics and Gynecology;
PCI: Peritoneal Cancer Index;
CCS: Complete Cytoreduction Score;
CT; Computed Tomography;
MRI: Magnetic Resonance Imaging;
PET-CT: Positron Emission Tomography–Computed Tomography;
PSM: Port-Site Metastases;
ECOG: Eastern Cooperative Oncology Group;
ASA: American Society of Anesthesiologists;
BRCA 1/2: Breast Cancer gene 1 and 2;
HRD: Homologous Recombination Deficiency;
PARP: Poly ADP-ribose Polymerase.

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Rezumat

Rolul triajului laparoscopic în managementul cancerului ovarian în stadiu avansat: un review de literatură

Cancerul ovarian avansat este frecvent diagnosticat în stadii avansate, necesitând strategii de tratament precise şi individualizate. Citoreducția chirurgicală rămâne piatra de temelie a tratamentului, rezecția completă macroscopică a tumorii oferind cele mai bune rezultate în ceea ce privește supraviețuirea. Cu toate acestea, evaluarea corectă a posibilității de rezecție rămâne o provocare majoră. Aceast review îşi propune să evalueze rolul laparoscopiei în trierea pacientelor cu cancer ovarian epitelial avansat, concentrându-se pe utilitatea sa în determinarea rezecabilității tumorale şi ghidarea conduitei terapeutice. Se acordă o atenție specială sistemelor de scor predictiv: scoruri clinice (scorul Suidan), scoruri intra-operatorii (Fagotti, PCI, Eisenkop) şi scoruri postoperatorii (Aletti). Trierea laparoscopică a demonstrat o acuratețe predictivă superioară imagisticii tradiționale în evaluarea rezecabilității tumorii. Sisteme de scor precum Fagotti şi Indicele de Cancer Peritoneal (PCI) oferă cadre validate pentru evaluarea intraoperatorie. Ghidurile internaționale, cum ar fi ESMO, ESGO, NCCN şi ASCO, susțin utilizarea laparoscopiei pentru evaluarea fezabilității efectuării citoreducției. Cu toate acestea, implementarea laparoscopiei de triaj rămâne limitată în unele țări, inclusiv România. Printre provocări se numără lipsa standardizării, accesul limitat la aparatura laparoscopică avansată şi riscul de metastaze la nivelul porturilor de acces. Laparoscopia de stadializare reprezintă un instrument valoros în managementul cancerului ovarian avansat, contribuind la alegerea strategiilor terapeutice optime. Integrarea viitoare a radiomicii, inteligenței artificiale şi a profilului molecular oferă perspective promițătoare pentru o îngrijire complet personalizată a pacientelor.

Cuvinte cheie: cancer ovarian, laparoscopie, triere, citoriducție chirurgicală, chimioterapie neoadjuvantă

Abstract

Advanced ovarian cancer is frequently diagnosed at late stages, necessitating precise and individualized treatment strategies. Surgical cytoreduction remains the cornerstone of treatment, with complete macroscopic tumor resection offering the best survival outcomes. However, accurately assessing resectability remains a major challenge. This review aims to evaluate the role of staging laparoscopy in triaging patients with advanced epithelial ovarian cancer, with a focus on its utility in determining surgical resectability and guiding treatment pathways. Emphasis was placed on predictive scoring systems: clinical scores (Suidan score), operative scores (Fagotti, PCI, Eisenkop) and postoperative scores (Aletti). Laparoscopic triage has shown greater predictive accuracy than traditional imaging in evaluating tumor resectability. Scoring systems such as the Fagotti and the Peritoneal Cancer Index provide validated intraoperative frameworks. International guidelines, such as ESMO, ESGO, NCCN, and ASCO, support laparoscopy for preoperative assessment, although its implementation remains limited in some countries, including Romania. Challenges include the lack of standardization, restricted access to advanced laparoscopic infrastructure, and the risk of port-site metastases. Staging laparoscopy is a valuable tool in the management of advanced ovarian cancer, aiding in the selection of optimal treatment strategies. Future integration of radiomics, artificial intelligence, and molecular profiling holds promise for fully personalized patient care.

Keywords: ovarian cancer, laparoscopy, triage, cytoreductive surgery, neoadjuvant chemotherapy

Introduction

Ovarian cancer is a neoplasm often diagnosed at advanced stages due to nonspecific symptoms, the lack of effective screening methods, and its increased aggressiveness (1). The ovary is the only organ in the reproductive system located intraperitoneally, and neoplasms found at this level have the characteristic of disseminating early throughout the peritoneal cavity (2,3). Moreover, histologically, 90% of ovarian cancers have a serous origin and a low grade of differentiation, sharing common properties with fallopian tube cancer and peritoneal cancer. Currently, all three are described and treated under the same umbrella (4). The management of advanced ovarian cancer has undergone many approaches over time, given the high mortality rate and the lack of effective methods to treat or alleviate this pathology. All these factors have led to a deeper understanding of the optimal approach for these patients. Currently, surgical intervention is the primary method to improve survival rates in this pathology. The goal of surgery in this context is to enhance the effect of systemic treatment. Thus, it is well established that surgery must be carefully planned to ensure optimal results, with the gold standard being the complete absence of macroscopically residual tumor (5). Of course, this is often impossible, with current studies showing that less than 50% of surgical interventions achieve this result, even in centers with extensive experience (6,7). Consequently, efforts have been made over time to understand the optimal size of residual tumors so that systemic therapy can have a beneficial effect and ensure the best survival and disease-free survival rates. The current standard is that residual tumors should be smaller than 1 cm (6,8).

The degree of resectability, to achieve optimal cytoreduction, has represented another challenge in the management of advanced ovarian cancer. A frequently asked question among specialists in the field is whether administering neoadjuvant chemotherapy followed by interval cytoreduction is necessary, versus primary cytoreduction followed by adjuvant chemotherapy (9). Since imaging methods have failed to effectively analyze the feasibility of optimal debulking, surgical approaches have been employed. However, there have been limitations here as well, since performing an exploratory laparotomy is an extremely invasive procedure, with a high preoperative morbidity rate and a long recovery period, which is highly disadvantageous in the case of these aggressive neoplasms (6). One method currently considered effective is the performance of exploratory laparoscopy, as it allows direct evaluation of resectability (8). Many international guidelines

have adopted exploratory laparoscopy as an essential step in the diagnosis and initial assessment of the feasibility of optimal debulking. However, in Romania, it is still not considered the standard procedure for ovarian neoplasms, but rather an option in their management.

This article aims to assess the current state of knowledge regarding the staging of exploratory laparoscopy in advanced ovarian neoplasms in determining surgical resectability and guiding treatment pathways.

The Role of Cytoreductive Surgery in Advanced Ovarian Cancer

Ovarian cancer continues to be diagnosed predominantly in advanced stages due to its nonspecific symptoms, which are often overlooked by patients, and the lack of effective screening methods. Approximately 75% of cases are diagnosed at FIGO stage III or IV, which are characterized by extensive peritoneal dissemination and/or distant metastases (3,6). As a result, the therapeutic strategy becomes multimodal, combining surgery with systemic chemotherapy (10).

The term "cytoreductive surgery" was first introduced in the medical literature in 1934 by J. V. Meigs in his work "Tumors of the Pelvic Organs", during a period when therapeutic resources for ovarian neoplasms were limited (11). Since then, significant progress has been made in defining the role of surgery in the management of advanced-stage ovarian cancer. The current gold standard in cytoreductive surgery is the complete removal of all visible macroscopic tumor masses (5). Studies have shown that patients with no residual disease can achieve 5-year survival rates of 60-70%, compared to less than 40% in those with suboptimal cyto-reduction. However, factors such as tumor dissemination into anatomically complex regions, the patient's performance status, and the surgical team's expertise often limit the extent of cyto-reduction. Optimal cytoreduction refers to surgery resulting in residual tumor nodules smaller than 1 cm. When followed by adjuvant chemotherapy, this approach can still yield favorable survival outcomes (12). Suboptimal cytoreduction involves residual macroscopic disease greater than 1 cm, with median survival typically not exceeding 30 months (7).

Despite efforts to improve surgical outcomes, studies have shown that the rate of complete cytoreduction, even in high-expertise centers, generally does not exceed 50-60% (6,7). Consequently, various preoperative tools for predicting resectability have been developed, including imaging techniques and serum biomarkers, though these have also demonstrated limited efficacy in accurately stratifying operability.

The decision between performing primary cytoreductive surgery versus neoadjuvant chemotherapy followed by interval cytoreduction must therefore be based on a realistic assessment of the likelihood of achieving complete or optimal tumor removal. From this clinical need emerged the concept of laparoscopic triage, a minimally invasive approach that allows real-time evaluation of the actual extent of disease and the collection of multiple biopsies for accurate staging (13).

The primary advantage of laparoscopy lies in the early recovery of patients deemed unlikely to benefit from immediate surgery, thus avoiding the morbidity associated with laparotomy and the extended postoperative recovery period. In such cases, chemotherapy can be initiated more promptly, improving the efficiency of multimodal treatment planning (10,14).

Selection Criteria for Laparoscopy

Diagnostic laparoscopy is an essential tool for assessing the feasibility of achieving maximal or optimal tumor resection in advanced ovarian cancer, particularly in cases where the decision between primary cytoreductive surgery and neoadjuvant chemotherapy as the initial therapeutic approach is not straightforward. Patient selection is generally based on multiple parameters, such as an Eastern Cooperative Oncology Group (ECOG) performance status of 0-1 or the absence of major anesthetic contraindications, typically American Society of Anesthesiologists (ASA) physical status classification I-II. The procedure is performed in a standardized manner to systematically explore the peritoneal cavity and perform validated intraoperative scoring systems (14).

In advanced ovarian cancer, there is a heightened risk of bowel injury during insertion of the primary trocar due to the presence of massive ascites, omental caking, adhesions, or a large pelvic mass. To minimize this risk, alternative approaches to the classical umbilical insertion are commonly used. One such alternative is the supraumbilical approach, with insertion approximately 3-5 cm above the umbilicus, on the midline, offering superior visualization of the mesocolon, diaphragms, and liver. Additionally,

some authors advocate for the Palmer's point entry, located 3 cm below the left costal margin on the midclavicular line, which is especially useful in cases with suspected periumbilical adhesions or a history of previous abdominal surgeries. Accessory ports (i.e., typically 5 mm) can be placed in the iliac fossae (15). Some authors argue that the use of a single accessory port may be sufficient, with the added advantage of reducing the risk of parietal complications (16).

Predictive Algorithms for Maximal/Optimal Cytoreduction Feasibility

Clinical scores

The Suidan Score is a clinical tool developed to assess the likelihood of achieving complete or optimal cytoreduction in patients with advanced-stage ovarian cancer. It is a score based exclusively on clinical features and imaging findings provided by computed tomography (CT). The study began by evaluating 24 potentially predictive factors for an increased likelihood of suboptimal cytoreduction, of which 9 factors were found to be significantly associated with intraperitoneal tumor spread: 3 clinical criteria and 6 radiologic criteria. A Suidan score below 2 is associated with a high probability of complete cytoreduction (with suboptimal cytoreduction rates of 5% for a score of 0, 10% for scores 1-2, and 17% for scores 3-4). In contrast, scores greater than 4 are predictive of an inability to achieve optimal cytoreduction (with suboptimal cytoreduction rates reaching up to 76% in patients with scores higher than 9) (17). In such cases, the oncology committee is typically advised to redirect the treatment plan toward initiating neoadjuvant chemotherapy (17).

Operative scores

The Fagotti Predictive Score was first proposed in 2006 by Fagotti et al. as a standardized algorithm for assessing the extent of disease during a staging laparoscopy to predict the feasibility of achieving complete or optimal cytoreduction (18). By using this score, the surgical team can accurately determine whether primary cytoreductive surgery is justified or whether neoadjuvant chemotherapy followed by interval debulking surgery would be more appropriate. The scoring system includes seven laparoscopic parameters, each graded as 0 points (absent) or 2 points (present). A predictive index value greater than 8 indicates a high risk of suboptimal cytoreduction, prompting the recommendation for initial neoadjuvant chemotherapy (18).

Since its introduction into surgical practice, the Fagotti score has been externally validated in several multicenter studies, confirming its reproducibility and clinical validity. The initial study demonstrated that laparoscopy has a negative predictive value of 100% at ruling out optimal cytoreduction, making it a highly reliable tool in clinical decision-making (18).

One of the most commonly reported limitations in accurately assessing the Fagotti score relates to the experience of the surgical team and the quality of the laparoscopic equipment used. In the Olympia-MITO, 13 multicenter validation study conducted on a cohort of 145 eligible patients, in approximately 9.5% of cases, operators faced difficulties due to poor video quality, while the most challenging parameter to assess-deemed unevaluable in 25.8% of cases, was mesenteric retraction (19).

Several adaptations of the original Fagotti score have been developed to address the practical limitations of exploratory laparoscopy (20,21). Adjusted Fagotti Score: This version excludes non-explorable parameters from the total score calculation, allowing for a more accurate assessment of resectability when one or more of the original seven criteria cannot be evaluated. However, a key limitation is that it compromises comparability between patients, and the traditional cutoff of >8 is no longer valid. Modified Fagotti Score: This version involves adjustments to the original score by either replacing or excluding certain parameters or by shifting from binary scoring (0/2) to a more nuanced system. The main limitation of this approach is the lack of standardization, potentially leading to variable results across different centers. Explorable Fagotti Score: This version calculates the total score solely based on the parameters that could be confidently assessed during laparoscopy. It is particularly useful in situations with limited visibility or extensive disease that prevents full anatomical evaluation. However, it also compromises standardization and cross-comparison.

The Peritoneal Cancer Index (PCI) is a scoring system used to assess the extent of peritoneal carcinomatosis, not only in ovarian cancer but also in gastric and colorectal cancers. First described by Sugarbaker in 1998, it is based on a topographic evaluation of tumor dissemination within the peritoneal cavity by dividing the abdomen into 13 distinct regions-9 abdominopelvic and 4 small

bowel segments (22). In each region, the maximum lesion size is assessed and scored as follows: 0: no visible tumor; 1: lesions <0.5 cm; 2: lesions between 0.5 and 5 cm; 3: lesions >5 cm or confluent disease. The total PCI score can range from 0 to 39. In a retrospective study conducted between 2010 and 2011, aiming to evaluate the relationship between PCI and the likelihood of complete cytoreduction (CCS 0), 98 patients with FIGO stage III-IV ovarian cancer undergoing surgery were analyzed. Through ROC curve analysis, PCI demonstrated a high discriminative capacity in predicting, with an area under the curve (AUC) of 0.839, indicating excellent predictive accuracy (23). However, in 1998, Sugarbaker also reported a key limitation of the PCI in the context of ovarian cancer: when critical anatomical regions, such as the root of the mesentery, are involved, a seemingly low PCI score may not accurately reflect the unresectability of disease in these specific areas (23).

The Eisenkop Scoring System evaluates five anatomical regions, each graded from 0 to 3 based on the degree of tumor involvement, yielding a total score ranging from 0 to 15 (24). Studies have demonstrated a significant correlation between the Eisenkop score and tumor resectability, as well as with the incidence of postoperative complications (21). For instance, one study revealed a strong association between higher Eisenkop scores and the occurrence of postoperative complications ($p<0.0001$), as well as with progression-free survival ($p<0.05$) (21). What distinguishes the Eisenkop score from other intraoperative systems is its inclusion of pelvic and para-aortic lymph node assessment, offering a more comprehensive view of disease spread. In terms of limitations, the Eisenkop score is less precise than the Peritoneal Cancer Index or the Fagotti score in describing the detailed pattern of peritoneal carcinomatosis. It also requires significant clinical expertise, making it potentially more subjective compared to other more standardized and reproducible scoring systems (21).

Postoperative scores

The Aletti Score, also known as the Surgical Complexity Score, is used to quantify the complexity of cytoreductive surgery, with the aim of standardizing the reporting of surgical procedures and enabling comparability across different centers. The score is based on assigning weighted values to various surgical procedures performed during cytoreduction, grouped by complexity on a scale from 1 to 3 points. The total score is the sum of all points assigned to the procedures conducted in a single operation and is categorized as follows: Low complexity: 1-3 points; Moderate complexity: 4-7 points; High complexity: >8 points (25). The validation study conducted by Aletti et al. provides robust evidence for the clinical utility of the Surgical Complexity Score in advanced ovarian cancer. It was found to be a significant predictor of major postoperative morbidity ($p = 0.008$), length of hospital stay ($p = 0.002$), and the likelihood of completing adjuvant chemotherapy ($p = 0.003$) (25). These findings suggest that patients undergoing more extensive surgical procedures had a higher probability of continuing systemic treatment, likely due to achieving more effective cytoreduction and maintaining a favorable functional status post-operatively.

Comparative Analysis of National and International Clinical Guidelines Regarding the Role of Staging (Triage) Laparoscopy in Advanced Ovarian Cancer Management (Table 1)

The American Society of Clinical Oncology (ASCO)

ASCO recognizes the value of staging laparoscopy in the evaluation of patients with advanced ovarian cancer (9). Systematic reviews and observational studies have shown that laparoscopy significantly reduces the rate of unnecessary laparotomies and suboptimal cytoreduction, with superior predictive accuracy compared to CT (AUC 0.955 vs. 0.755) (26). Laparoscopy is recommended for assessing resectability, obtaining biopsies, and classifying peritoneal carcinomatosis (9).

The European Society of Gynaecological Oncology and The European Society for Medical Oncology (ESGO and ESMO)

ESGO and ESMO support the use of laparoscopy as a valuable minimally invasive method for evaluating patients with advanced ovarian cancer. Laparoscopy can reduce the rate of unnecessary surgical interventions and can guide the decision between primary surgery and neoadjuvant chemotherapy. Laparoscopic and imaging-based scoring systems are useful for patient triage, but no universally accepted system currently exists. Additionally, these societies recommend thorough surgical staging for patients with resectable disease (13).

Table 1. Comparison between national and international guidelines

	Romanian Society of Obstetrics and Gynecology	NCCN / ESMO / ESGO / ASCO
Indication for Laparoscopic Triage	Only used in selected cases, used especially as a biopsy tool or for staging purposes.	A valuable tool for pre-debulking surgery in selected cases where the preoperative triage is unclear.
Evaluation of the feasibility of primary debulking surgery	Has not yet been adopted into clinical practice.	Laparoscopy is recommended for choosing between primary cytoreduction or neoadjuvant chemotherapy, followed be interval cytoreduction.
Scoring	N/A	A universal score has not been implemented, but validated scores are promoted.
Integration in guidelines	Limited, mentioned as an option in selected cases.	Completely integrated into international guidelines as a useful tool in triaging patients.
Resources and expertise	Limited in some centers.	Specialized oncological centers, specialized teams of gyneco-oncologists, and access to advanced technology.

The National Comprehensive Cancer Network (NCCN)

The NCCN recommends staging laparoscopy in cases of advanced-stage ovarian cancer, performed by experienced surgeons to assess the likelihood of achieving optimal cytoreduction using validated scoring systems (27). Laparoscopy has been shown to significantly increase the rate of optimal cytoreduction, which can reach up to 90% with laparoscopy (28). Laparoscopy is also used in the evaluation of recurrent disease to determine the feasibility of secondary cytoreduction.

Romanian Society of Obstetrics and Gynecology (RSOG)

RSOG guidelines recommend laparoscopy in selected cases, particularly for surgical staging and biopsy in stage I disease or inoperable advanced cases. If optimal cytoreduction cannot be achieved laparoscopically, conversion to midline laparotomy is advised. Complete surgical staging is mandatory in curative interventions, including the assessment of residual disease and the extent of tumor spread. RSOG does not recommend triage laparoscopy as a universal standard; its use depends on the expertise of the surgical team and the resources available (29).

Challenges and Limitations of Staging Laparoscopy in Advanced Ovarian Cancer

Subjectivity of laparoscopic scoring systems

The predictive value of staging laparoscopy often depends on subjective intraoperative evaluations. Various scoring systems have been proposed, yet none are universally validated or consistently applied in clinical practice. Interobserver variability may influence the interpretation of disease resectability and complicate triage decisions (30). A lack of objective, reproducible criteria can result in inconsistent surgical recommendations and affect treatment outcomes (31,32).

Unequal access to technology and surgical expertise

One of the most significant barriers to the implementation of staging laparoscopy is unequal access to advanced laparoscopic technology and adequately trained surgical teams. In many low- and middle-income countries, including some parts of Eastern Europe such as Romania, the infrastructure and human resources needed to perform and interpret staging laparoscopy remain limited (33,34). By contrast, in high-resource settings across Western Europe and North America, laparoscopy is more commonly used as a standard part of preoperative evaluation. This disparity contributes to differences in clinical practice, patient outcomes, and adherence to international standards of care (35).

Need for standardization and structured training

There is a critical need for the international standardization of laparoscopic staging protocols, including uniform scoring systems and training pathways. Despite guideline recognition from NCCN, ESGO, ESMO, and ASCO, many centers lack structured programs to train gynecologic oncologists in advanced laparoscopic techniques. Furthermore, variation in perioperative decision-making, such as when to convert to laparotomy or initiate neoadjuvant chemotherapy, underscores the importance of harmonized clinical algorithms and quality assurance systems. The development of consensus-based guidelines and surgeon credentialing processes would significantly improve reproducibility and global implementation (36,37).

Contraindications and borderline clinical cases

Laparoscopy may not be feasible in all patients. Absolute or relative contraindications include poor performance status, extensive intra-abdominal adhesions, massive ascites, or rapid tumor progression (38). Furthermore, laparoscopic exploration may be limited in detecting small bowel mesentery infiltration or deep pelvic fixation areas crucial for surgical decision-making. In such borderline cases, laparoscopy may either underestimate or overestimate disease burden, leading to inappropriate surgical or chemotherapeutic strategies (39).

Risk of Port-Site Metastases

Although rare, the occurrence of port-site metastases (PSM) remains a theoretical and occasionally observed complication of laparoscopic procedures in advanced ovarian cancer. PSM refers to tumor implantation at the trocar insertion sites and has been reported with variable incidence rates (ranging from 0.5% to 3%) (40). The pathogenesis is multifactorial, potentially involving tumor aerosolization, local immune suppression, or direct mechanical contamination during instrument removal. While modern techniques, including the use of protective bags for specimen retrieval, CO_2 filtration, and minimal manipulation, have reduced this risk, its mere possibility raises concerns, especially in centers with limited laparoscopic oncology experience. Importantly, studies suggest that the occurrence of PSM does not significantly impact overall prognosis if detected early and treated promptly, but it adds a layer of complexity and underscores the need for procedural caution (40-42).

Future Perspectives in the Use of Triage Laparoscopy in Advanced Ovarian Cancer

The role of artificial intelligence and advanced imaging (Radiomics)

Artificial intelligence (AI) has the potential to revolutionize resectability assessment in ovarian cancer through automated analysis of medical imaging (Computed Tomography, Magnetic Resonance Imaging, Positron Emission Tomography – Computed Tomography). Radiomics, an emerging field that extracts quantitative features from medical images, can identify subtle patterns of tumor spread not detectable by conventional surgical or radiologic means. The combination of AI and radiomics enables the development of predictive models with superior accuracy compared to traditional subjective scoring systems (43,44).

Integration of molecular biomarkers (BRCA, HRD) into triage decisions

Advances in tumor biology have highlighted the critical role of molecular biomarkers, particularly Breast Cancer gene 1 and 2 (BRCA 1 and 2) mutations and homologous recombination deficiency (HRD) status. BRCA mutations are associated with increased responsiveness to platinum-based chemotherapy and Poly ADP-ribose polymerase (PARP) inhibitors, as well as a higher likelihood of achieving complete cytoreduction (45,46).

Incorporating these biomarkers into clinical decision-making may help tailor initial treatment strategies. For instance, patients with BRCA-positive status and low tumor burden may be prioritized for primary cytoreductive surgery, while those with HRD-negative status and extensive disease may derive greater benefit from neoadjuvant chemotherapy followed by interval debulking surgery (47,48).

Conclusion

Staging laparoscopy plays a crucial role in the modern management of advanced epithelial ovarian cancer by enabling accurate assessment of tumor resectability and supporting informed decisions regarding the optimal treatment approach. Its ability to reduce unnecessary laparotomies and guide the choice between primary cytoreductive surgery and neoadjuvant chemotherapy enhances patient outcomes and minimizes treatment-related morbidity. Despite its proven benefits and endorsement by leading international guidelines, the use of laparoscopic triage remains inconsistent, particularly in settings with limited access to specialized surgical teams and equipment. The standardization of scoring systems, wider training initiatives, and incorporation of advanced imaging and molecular markers are essential steps toward universal adoption. As the field moves toward precision oncology, the integration of artificial intelligence, radiomics, and genomic data will be instrumental in shaping a more individualized and effective care paradigm for patients with advanced ovarian cancer.

Conflicts of Interest

The authors declare no conflicts of interest.

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