

Review Article

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Pre- and Postoperative Evaluation, Morbidity, and Postoperative Outcome of Elderly Gynecological Cancer Patients

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ABSTRACT

Background: Cancer is primarily a disease of older adults, with over 50% of new diagnoses and 70% of mortality occurring in individuals over 65 years. Despite this heavy burden, older patients remain severely underrepresented in landmark oncology clinical trials. Unfounded fears of high postoperative morbidity often lead clinicians to deliver sub-optimal surgical treatment or withhold curative therapies entirely.

Methods: We synthesized data from major landmark international trials published by the European Society of Gynaecological Oncology (ESGO) and the European Journal of Surgical Oncology (EJSO). The analyzed metrics focused heavily on the clinical utility of the Comprehensive Geriatric Assessment (CGA), the Preoperative Assessment of Cancer in the Elderly (PACE) instrument, the impact of intraoperative hypothermia, and standard modern Enhanced Recovery After Surgery (ERAS) pathways in elderly oncological cohorts.

Results: Large-scale multi-center prospective studies confirmed that chronological age alone does not associate with the occurrence of severe postoperative complications. Adherence to ERAS protocols remains exceptionally high among the elderly. However, multi-system vulnerabilities such as abnormal baseline Instrumental Activities of Daily Living (IADL) and intraoperative hypothermia ($<36.0^{\circ}\text{C}$) served as aggressive independent predictors of early 30-day morbidity. Specifically, surgical hypothermia demonstrates a critically high risk for deep vein thrombosis/pulmonary embolism (VTE/PE) events (OR 3.53) and significantly degrades median overall survival from 45 months down to 34 months.

Conclusions: Functional status, rather than chronological age, must remain the principal factor determining surgical candidacy in gynecological oncology. Implementing specialized multi-professional frameworks combining aggressive temperature management, structured non-opioid pain regimes, and standard 4-week LMWH thromboprophylaxis achieves favorable clinical outturns without denying standard curative therapies to older populations.

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Introduction

Cancer is fundamentally recognized as a disease of the aging population. Global epidemiological records from institutions like the International Agency for Research on Cancer (IARC) demonstrate that more than half of all solid malignancies are detected beyond the age of 65, and over 70% of oncological mortality takes place within this older demographic. In the specific field of gynecological malignancies, advanced age introduces an aggressive burden. For instance, ovarian cancer represents the seventh most common malignancy and the eighth leading cause of cancer-related death in women worldwide, with the vast majority of cases (85% to 90%) manifesting explicitly during postmenopausal years.

Despite the massive public health footprint of geriatric malignancies, elderly patients are routinely excluded or underrepresented in landmark randomized clinical trials that define standard oncology

guidelines. This clinical gap often cultivates widespread hesitation among surgical teams. Presumed anxieties surrounding sudden perioperative mortality, extensive length of hospital stay, and severe postoperative decline frequently culminate in the delivery of sub-optimal surgical staging or the total avoidance of necessary cytoreductive surgeries. However, contemporary surgical science demonstrates that calendar age alone does not reflect the actual physiological reserve or surgical tolerance of an individual patient. Transitioning from an obsolete, chronological age-based approach to an integrated, biology-informed, and multi-professional model is paramount to securing patient safety and survival.

Preoperative Multidisciplinary Risk Assessment

To protect vulnerable candidates from undue surgical morbidity, modern oncology pathways demand a structured, multidisciplinary preoperative evaluation. This process involves executing a Comprehensive Geriatric Assessment (CGA) and securing cross-functional consultations across vital organ systems prior to planning any elective major surgery.

Table 1: Core Domains and Standardized Measures in the Geriatric Assessment (GA)

Geriatric Assessment Domain	Standardized Clinical Measures & Assessment Instruments
Functional Status	Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), Karnofsky Self-Reported and Physician-Rated Performance Scales, Number of falls over the last 6 months
Comorbidity & Physical Health	Systemic physiological scorebooks, counts of persistent chronic disorders
Psychological Status	Hospital Anxiety and Depression Scale (HADS)
Social Function & Integration	Medical Outcomes Study (MOS) Social Activity Survey
Social Support Network	MOS Social Support Survey (Emotional, Informational, and Tangible subscales)
Nutritional Profile	Body Mass Index (BMI), documentation of unintentional weight loss over the preceding 6 months

Large prospective validation trials have thrown specific light on the predictive capacity of these assessment metrics. Notably, the Preoperative Assessment of Cancer in the Elderly (PACE) instrument—which merges components of the traditional CGA with specialized surgical risk indices—was robustly validated across a prospective trial of 460 patients undergoing major curative resections for breast, gastrointestinal, and genitourinary malignancies (European Journal of Surgical Oncology). The landmark data compiled from this cohort demonstrated that chronological age has no statistical correlation with early postoperative complication rates. Instead, baseline impairments in IADL, moderate-to-severe fatigue scales on the Brief Fatigue Inventory (BFI), and abnormal baseline Performance Status (PS) stood out as the principal independent predictors of 30-day major surgical morbidity and extended lengths of hospital stay.

Intraoperative Adherence and Temperature Management

A vital phase of modern biology-informed oncology care is the intraoperative mitigation of modifiable environmental stressors. Multiple landmark clinical studies highlight that maintaining perioperative normothermia and optimizing systemic tissue oxygenation drastically lower surgical site infection rates (Belda et al., JAMA 2005; Greif et al., NEJM 2000; Kurz et al., NEJM 1996).

In advanced gynecological oncological surgeries, which frequently require protracted operative times and extensive abdominal exposure, temperature management becomes highly critical. A prominent multi-center trial published by Moslemi-Kebria, El-Nashar, Aletti, and Cliby in Obstetrics & Gynecology (2012) evaluated 146 women with Stage IIIC and IV Epithelial Ovarian Cancer (EOC) undergoing primary cytoreductive debulking surgeries. The investigation revealed that intraoperative hypothermia (defined strictly as a core temperature dropping below 36.0°C) serves as an aggressive independent predictor of highly unfavorable surgical outcomes.

Table 2: Impact of Intraoperative Hypothermia (<36.0°C) during Cytoreductive Surgery

Clinical Metric / Complication Profile	Hypothermic Group (<36.0°C) Outcomes and Risks
Perioperative Mortality Rate	All 5 documented perioperative deaths occurred exclusively within the hypothermic cohort.
Venous Thromboembolism (VTE) Risk	Significantly elevated hazard profile with an adjusted Odds Ratio (OR) of 3.53 (95% CI: 1.02–16.44).
Infectious Morbidity Rate	Marked increase in surgical wound and systemic infections; adjusted OR of 2.99 (95% CI: 0.97–11.35).
Median Overall Survival (OS)	Severely degraded survival timeline, dropping to 34 months compared to 45 months in the normo-thermic group.
Median Overall Survival (OS)	Surgical hypothermia is established as an independent predictor of early complications and shortened long-term survival.
Clinical Conclusion	Surgical hypothermia is established as an independent predictor of early complications and shortened long-term survival.

Concurrently, data from international trials investigating Enhanced Recovery After Surgery (ERAS) pathways in the elderly confirm that older cohorts exhibit highly successful adherence rates to multimodal protocols. A major prospective trial indexed under PMID 27770249 evaluated the feasibility of ERAS pathways in senior populations. The findings definitively proved that despite carrying a higher baseline burden of chronic comorbidities, older adults managed under standard ERAS tracks did not suffer any increased rate of severe complications, displaying recovery timelines and discharge parameters nearly identical to their younger counterparts.

Postoperative Pain Management and Anti-Thrombotic Protocols

Postoperative care in the elderly requires a meticulous balance to achieve optimal pain relief while avoiding severe medication-induced side effects, such as opioid-driven sedation, delirium, and respiratory depression. Modern protocols favor a multimodal, opioid-sparing approach utilizing non-opioid vectors as the first line of care:

- **Paracetamol (Acetaminophen):** Remains the foundational analgesic of choice for mild-to-moderate postoperative pain. Recommended at scheduled intervals of 650 mg to 1000 mg every 6 hours, capped strictly at a maximum daily allowance of 4 g per 24 hours to prevent localized hepatic toxicity.
- **Intravenous NSAIDs (Ketorolac):** Provides potent anti-inflammatory pain relief but carries severe risks of transient platelet dysfunction, acute gastrointestinal hemorrhage, and sudden renal insufficiency in older populations. Accordingly, guidelines require a strict geriatric dose reduction down to 15 mg every 6 hours, with a maximum rigid ceiling of 60 mg within any 24-hour window.

- **Anticoagulation Profiling:** Due to the combined hypercoagulable state of advanced age and malignant pelvic disease, high-risk gynecological oncology candidates must receive extended pharmacomechanical thromboprophylaxis utilizing Low-Molecular-Weight Heparin (LMWH) for a mandatory duration of 4 weeks post-surgery to safely suppress deep vein thrombosis and catastrophic pulmonary embolisms.

Conclusion

The collective data from landmark international clinical trials verify that chronological age alone should never serve as a valid contraindication to major curative cancer surgeries. Delivering advanced gynecological oncological care to the aging population requires the systematic adoption of a biology-informed framework. By integrating rigorous preoperative risk stratification via CGAs, maintaining vigilant intraoperative normothermia, and adhering strictly to non-opioid multimodal ERAS pathways, elderly cancer patients achieve highly favorable surgical outturns and preserved long-term survival without being unjustly denied standard, potentially life-saving care [1-6].

References

1. Extermann M, Hurria A (2013) Comprehensive geriatric assessment for older patients with cancer. *J Clin Oncol* 31: 2405-2412.
2. Chow WB, Rosenthal RA, Merkow RP, Ryan P Merkow, Clifford Y Ko, Nestor F Esnaola, et al. (2012) Optimal preoperative assessment of the geriatric surgical patient. *J Am Coll Surg* 215: 275-292.
3. Gustafsson UO, Scott MJ, Hubner M, Adrian O Alvarez, Marianna Sioson RS, et al. (2019) Guidelines for Perioperative Care in Elective Abdominal Surgery: Enhanced Recovery After Surgery (ERAS) Society Recommendations. *World J Surg* 43: 659-695.
4. Moslemi-Kebria M, El-Nashar SA, Aletti GD, Cliby WA (2012) Intraoperative hypothermia during cytoreductive surgery for ovarian cancer and perioperative morbidity. *Obstet Gynecol* 119: 590-596.
5. Sliker J, Frauche P, Jurt J, Addor V, C Blanc, et al. (2017) Enhanced recovery ERAS for elderly: a safe and beneficial pathway in colorectal surgery. *Int J Colorectal Dis* 32: 215-221.
6. Schofield L (2014) Pain management in older adults undergoing surgery. *Anaesthesia* 69: 54-60.