

Role of Surgery in the Elderly Patients Affected from Advanced Stage Ovarian Cancer

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Abstract

The aim of this study is to compare morbidity, surgical treatment and post-operative complications in elderly patients underwent surgery for advanced stage ovarian cancer, comparing to younger patients. Data of patients underwent surgery at the Department of Obstetrics and Gynecology of Cannizzaro Hospital (Catania) for advanced stage (IIIC-IV) ovarian cancer were collected from January 2000 to December 2013. Patients were stratified by age in two groups (I > 65 years and II < 65 years old). Following variables were collected: stage of the tumor, associated diseases, previous chemotherapy, the type of surgical procedures, blood transfusions, intraoperative and postoperative morbidity, mortality, and hospital stay. Median values between the two groups were compared using Mann-Whitney test and frequency data using χ^2 . Statistical significance was defined as $P < 0.05$. A total of 179 patients were identified, they were divided into 2 groups: 64 patients were age 65 years or older (group I) and 115 patients were younger than age 65 (group II). In the whole series, 157 patients (87%) did not experience any complication. Overall, postoperative complications occurred in 10 (15%) patients in the group I and in 12 (10%) in the group II ($p = NS$). In conclusion, elderly patients may tolerate well surgical procedures within acceptable post-operative morbidity, a length of hospital stay and a need for intensive care quite similar to that of younger patients.

Keywords

Elderly, Surgery, Ovarian Cancer

1. Introduction

Cancer in the older persons has become an increasingly common problem. In Europe, the population aged over

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65 years at present is 13% and is expected to increase further, with 24.4% for the year 2050. Moreover 58% of all female cancer occurs in women older than 65 years; in particular 43% of epithelial ovarian cancer is diagnosed in this age group [1]-[3]. However, this population receives substandard treatment when compared to the younger people, generally due to the presence of associated medical conditions. Thus, the gynecologic oncologists will face an increasing proportion of elderly patients in the near future. The treatment for gynaecological malignancies is well defined with respect to the surgery, radiation treatment and chemotherapy. The standard therapy for ovarian cancer is cytoreductive surgery followed by combination chemotherapy [4]. This aggressive surgical approach has an impact for the elderly women, because the prevalence of comorbidity increases with age. In the elderly, the higher incidence of complications and the increased operative mortality often outweigh the uncertain therapeutic results [5]. However, in recent years, new developments in the fields of anesthesiology, perioperative care, and surgical techniques have modified the picture [6].

We investigated a large series of patients, who underwent surgery for advanced stage (IIIC-IV) ovarian cancer at our department in the past decade. We analyzed the clinical features of the patients and the outcome in terms of operative morbidity and mortality, and we compared the same parameters by age of patient (young and elderly) in order to investigate whether clinical features did influence the feasibility and tolerability of surgery in elderly patients.

Overall, the aim of this study is to compare the surgical treatment and post-operative complications between these two groups.

2. Materials and Methods

We retrospectively collected all consecutive cases of patients underwent surgery for ovarian cancer at the Department of Obstetrics and Gynecology, Cannizzaro Hospital, from January 2000 to December 2013. Patients were stratified by age in two groups, group I > 65 years and group II < 65 years. We reviewed patients' charts and recorded the following variables: weight, and height, stage of the tumor, associated diseases, previous chemotherapy, type and duration of surgical procedures, preoperative and postoperative hemoglobin count, blood transfusions, intraoperative and postoperative morbidity, mortality, and hospital stay. Before surgery, the anesthetic risk was evaluated by the Standard Physical Status Classification System of the American Society of Anesthesiology (ASA).

In this study, all patients were submitted to explorative laparoscopy/laparotomy in order to evaluate the feasibility of optimal cytoreduction and, based on the intraoperative findings, were routed to continue with surgery or in alternative to start NACT. All types of surgery (debulking surgery, systematic lymphadenectomy, or explorative laparotomy) were considered and recorded. We defined complete cytoreduction the absence of any macroscopic residual tumor (RT) at the end of the procedure; optimal RT consisted of remaining lesions < 1 cm. All patients were treated with platinum-based chemotherapy; 6 adjuvant cycles in patients underwent successful PDS and 3 neoadjuvant cycles in patients routed to IDS followed by 3 adjuvant cycles after successful debulking.

Febrile morbidity was defined as two oral temperatures greater than 38°C, taken at least 4 h apart, starting 24 h following surgery. Severe post-operative complications were recorded. Pulmonary embolism was considered only when ascertained by echo Doppler evaluation. Sepsis was diagnosed only when confirmed by isolation of an infectious agent in the blood. Perioperative mortality was defined as death occurring within 48 h from the induction of anesthesia. Post-operative mortality was defined as death occurring between 48 h after the start of anesthesia and 30 days after the last surgical procedure [7]. Wound dehiscence, intestinal occlusion, retroperitoneal abscess were considered too. We calculated patients' distribution by clinical and surgical characteristics and evaluated the results of surgery on the whole series. The median values between the two Groups were compared using the Mann-Whitney U test. Frequency data were evaluated by Chi-square test.

Statistical significance was defined as $P < 0.05$.

3. Results

A total of 179 patients who met study selection criteria were identified, they were divided into 2 groups: 64 patients were age 65 years or older (group I) and 115 patients were younger than age 65 (group II). The distribution of patients by age, stage, obesity, ASA physical status classes, and presence of associated diseases is presented in **Table 1**. Overall, 91 (51%) patients had preexisting medical illnesses, and 45 (25%) were ASA class

III-IV. Difference was significant among the two groups. Overall, 97 (54%) of patients were underwent to major surgical procedures including hysterectomy, salpingo-ovariectomy, total omentectomy and systematic pelvic and lomboarctic nodes dissection. A systematic lymphadenectomy was performed in 28 (43%) of the elderly persons vs 60 (52%) in the young. Overall, 22 patients (12%) were underwent to neoadjuvant chemotherapy and interval debulking surgery successively. Overall, optimal cytoreduction (RT < 1 cm) was achieved in 89 (50%) patients: 29 (45%) patients of the I group, 60 (52%) patients of the II group. No significant difference was found among the two groups. In the whole series, 157 patients (87%) did not experience any complication. Overall, postoperative complications occurred in 10(15%) patients in the group I and in 12 (10%) in the group II (p = NS). The type and frequency of severe postoperative complications are detailed in **Table 2**. Two patients in the group I required postoperative intensive care because of respiratory failure and cardiac failure. The median duration of hospital stay was similar between the two groups. In the whole series, no patient died perioperatively.

4. Discussion

The increase in life expectancy is combined with a risk of developing a solid tumour. Most cancer-related deaths occur within patients aged 65 years or older, however this expanding population receives substandard treatment when compared to the younger age group [8].

This is due to the perceived limitations to offer conventional treatments to the elderly as there are concerns about associated medical conditions, shorter life expectancy, reluctance to incorporate older patients either into clinical trials of novel agents, or into existing screening programs [9]. Although this concern refers to the overall

Table 1. Patients characteristics.

	I group (64 pts)	II group (115 pts)	P
AGE (years)	72 (65 - 94)	51 (22 - 64)	
STAGE			
IIIC	61 (95%)	105 (91%)	
IV	3 (5%)	10 (9%)	
Obesity	10 (16%)	10 (8%)	<0.05
ASA physical status			<0.05
• Class II	34 (53%)	100 (87%)	
• Class III	25 (39%)	13 (11%)	
• Class IV	5 (7%)	2 (2%)	
Patients with comorbidity	42 (65%)	38 (33%)	<0.05
Optimal cytoreduction (RT < 1 cm)	29 (45%)	60 (52%)	NS

Table 2. Postoperative complications.

	I group (64 pts)	II group (115 pts)	P
Total complications	10 (15%)	12 (10%)	NS
Wound dehiscence	3 (4%)	4 (3%)	NS
Intestinal occlusion	1 (1%)	1 (1%)	NS
Retroperitoneal abscess	1 (1%)	1 (1%)	NS
Pulmonary embolism	2 (3%)	2 (2%)	NS
Deep venous thrombosis	2 (3%)	3 (3%)	NS
Sepsis	1 (1%)	1 (1%)	NS

management of the elderly with cancer involving multimodal treatment, surgery is probably the most successful treatment option at the present moment.

A recent retrospective study suggests that elderly patient could be safely managed in the same way of younger patients without an increasing of morbidity and with clinical outcomes similar to those reported in younger case [10].

The increased age of the population is accompanied by an increase of age-related diseases, such as cardiovascular disease, chronic obstructive pulmonary disease, hypertension, arthritis, diabetes mellitus and other malignancies. Beside the tumour stage, with higher stages in elderly cancer patients, the assessment of the comorbidity is an important aspect of the surgical decision-making process [11].

The current standard combined treatment approaches of surgery, chemotherapy and radiation treatment are well defined for the different solid tumours, but there is a need for further exploration in the elderly cancer patients. Improvement in the diagnostic and surgical care of elderly cancer patients will have a final impact on disease-free and overall survival rates of the different types of cancer treatment.

Women with ovarian cancer have a high incidence rate of local recurrences. Although the survival across all stages is 40%, patients with advanced disease have a 5-year survival rate of only 23%. Invasive epithelial ovarian cancer is largely a disease of postmenopausal women, with reproductive age women comprising only 20% of all patients [6]. Many published studies have specified age as a significant prognostic factor; however, some reports have shown that younger age is not an independent prognostic factor for improved survival [12].

The standard therapy is cytoreductive surgery followed by combination chemotherapy. Studies suggest that those patients with zero residual tumor at conclusion of cytoreductive surgery have significantly longer survival than those patients considered optimal at 0 cm to 1 cm [13].

Table 3. Feasibility of cytoreductive surgery in elderly patients.

	n. pts	Optimal cytoreduction	Complications rate
Trillsh F, 2013	275 (tot)		
• pts < 70 y	228 (83%)	71.5%	NS
• pts > 70 y	43 (17%)	55.3%	
		p < 0.05	
Wright JD, 2004	175 (tot)		
• pts < 70 y	129 (74%)	82%	NS
• pts > 70 y	46 (26%)	81%	
Chan JK, 2003	104 (tot)		
• pts < 45 y	52 (50%)	69%	NS
• pts > 45 y	52 (50%)	67%	
Petignat P, 2004	736 (tot)		
• pts < 70 y	451 (61%)	43%	---
• pts > 70 y	285 (39%)	20%	
		p < 0.001	
Fotopoulou C, 2010			
• pts > 75 y	101	45 (44.6%)	40.6%
Ben-Ami I, 2006	63 (tot)		
• pts < 70 y	48 (76%)	---	NS
• pts > 70 y	15 (24%)		
Sharma S, 2005	140 (tot)		
• pts < 65 y	77 (55%)	NS	NS
• pts > 65 y	63 (45%)		

Maximal cytoreductive surgery is one of the most powerful determinants of survival in patients with stage III and IV ovarian cancer. Unfortunately, older patients underwent fewer operations as compared with those of their younger counterparts [14]. It is commonly believed that older patients might not be able to tolerate the debilitating effects of radical surgery. Both cytoreductive surgery and chemotherapy require good physiologic capacities and because elderly patients are more likely to have comorbid conditions as hypertension, cardiac disease, diabetes or others contraindicating these therapeutic approaches, they are less likely to receive optimal surgery and chemotherapy [15]. Several studies have evaluated ovarian surgery in elderly [11] [14] [16]-[18]; they confirm the feasibility of optimal cytoreduction with a complication rate similar to younger patients (Table 3); advanced age should not be considered a contraindication to cytoreductive surgery [14] [19]. In our research, only two recent studies [8] [20] confirm, in their experience, that elderly patients with ovarian cancer are often treated less radically than younger patients. However, our results show that elderly patients may tolerate well surgical procedures within acceptable postoperative morbidity, a length of hospital stay and a need for intensive care quite similar to that of younger patients. The introduction of several expedients in the surgical technique, as well as in the perioperative management, resulted in a significant improvement of surgical rates. It is likely that such expedients, already proven beneficial in series not selected by age are particularly useful in geriatric patients, in whom blood loss reduction and prevention of ischemic, thromboembolic, and infectious disorders may greatly influence the feasibility and tolerability of surgery. We confirm that the majority of elderly patients are able to tolerate the standard of care for ovarian cancer including initial surgical cytoreduction followed by platinum and taxane chemotherapy. For elderly patients with significant medical comorbidity, the extent of surgery and aggressiveness of chemotherapy should be tailored to the extent of disease, symptoms, overall health, and life goals. In addition, enhanced cooperation between geriatricians and oncologists may assist the pretreatment assessment of elderly patients and improve treatment guidelines in this population.

5. Conclusion

Our study is limited by the purview of a retrospective study and also incomplete follow-up information to obtain survival analysis. Nevertheless, our data suggest that elderly patients may tolerate well surgical procedures within acceptable postoperative morbidity, a length of hospital stay and a need for intensive care quite similar to that of younger patients.

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