

**Original Article****Lymph Node Dissection in Interval Debulking Surgery: Two Years Analysis**

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Email: drdimpyb@gmail.com**Abstract**

Background and Objectives: *ovarian cancer comprise 4% of all women cancer and 34% amongst gynaecological tract cancer. Lymphatic dissemination to the pelvic and para-aortic lymph node seen in usually advanced stage disease. Retroperitoneal lymph node involvement occur in approximately 50% to 80% of women with advanced ovarian cancer. The role of routine lymph node dissection is still not clear in interval debulking surgery.*

Materials and Methods: *all ovarian histologically proven adenocarcinoma cases receiving neoadjuvant chemotherapy and undergoing debulking surgery with or without routine lymphadenectomy operated during the period 2013-14 were included in the study and divided into control and cases arm. Outcome measurement were done in relation to progression-free survival (PFS) to detection of progression of disease or death with number of hospital stay peri-operative and postoperative complication.*

Results: *Lymph node dissecting group of patients showed longer intraoperative period with significant amount of blood loss with longer hospital stay without any benefit over overall and progression free survival.*

Conclusion: *a routine pelvic lymphadenectomy for stage III and IV ovarian cancer during interval debulking has no advantage over recurrence and progression or overall survival and is associated with higher morbidity.*

Keywords: *ovarian carcinoma, pelvic lymphnodadenectomy, paraaortic lymphadenectomy.*

Introduction

Ovarian cancer comprise 4% of all women cancer and 34% amongst gynaecological tract cancer. The life-time risk of diagnosis of ovarian cancer is 1 in 48 women).¹ Worldwide there are more than 200,000 new cases of ovarian cancer each year,

accounting for around 4% of all cancers diagnosed in women.^{2,3} The prognosis of early stage epithelial ovarian cancer is relatively good, with a 5-year survival rate of over 89%, whereas advanced stage disease has a 5-year survival rate of approximately 40%.⁴ Due to late onset of

symptoms and lack of effective screening tools, resulting in the approximately 70% of women being diagnosed with advanced-stage disease^{5,6} which is associated with high morbidity and mortality.

Lymphatic dissemination to the pelvic and para-aortic lymph node seen in usually advanced stage disease. Retroperitoneal lymph node involvement occur in approximately 50% to 80% of women with advanced ovarian cancer.⁷ Surgery represents the cornerstone of the diagnosis and staging of ovarian cancer and is used to obtain prognostic information and to relieve symptoms.⁸ Currently, standard primary therapy for patients with advanced EOC is primary debulking surgery (PDS) aiming to remove all visible tumor tissue, followed by adjuvant chemotherapy (ACT) with paclitaxel and carboplatin^{9,10} Surgical management includes: removal of the uterus, both fallopian tubes, and both ovaries; an omentectomy; retroperitoneal lymph node assessment (lymphadenectomy); and biopsies of peritoneum and peritoneal deposits^{11,12}. In advanced stage ovarian cancer lymphadenectomy might mainly benefit patients who underwent complete intraperitoneal debulking to treat advanced stage disease.¹³ Recently, interval debulking surgery (IDS) after a short course of neoadjuvant chemotherapy (NACT), usually three cycles of chemotherapy, has become a possible alternative treatment option to standard treatment in patients unable to undergo complete resection during PDS. Several randomized trial have shown that progression free survival and overall survival rates in patient given NACT-IDS were not different from those going PDS, patient who received NACT had significantly lower adverse effect and mortality rates after IDS than undergoing PDS.^{14,15}

Nodal disease does not respond very well to chemotherapy. Lymphadenectomy is justified to remove bulky nodes or in cases where complete macroscopic debulking has been achieved. But role of routine lymphadenectomy is not still clear in interval debulking surgery. Therefore our study

aims at finding out lymph node positivity during lymphadenectomy in NACT-IDS (in both bulky and non bulky nodes) and comparing them with NACT-IDS non lymphadenectomy group for 2 years survival analysis.

Methods

Retrospective study for one year conducted at Dr.B.Borooah Cancer Institute, Guwahati.

All patients operated during 2013-14 were included. Patients were divided into two arms. In one arm patients where lymphadenectomy was not done were put (control arm) and in other arm where lymphadenectomy was done were kept(cases arm).

Inclusion criteria- All ovarian histologically proven adenocarcinoma patients receiving neoadjuvant chemotherapy and undergoing debulking surgery with or without pelvic lymphadenectomy Operated during the period 2013-14 completing treatment with regular 2 years follow up.

Exclusion criteria- any other ovarian carcinoma other than adenocarcinoma. Patients who did not completed treatment and were not on regular follow up were excluded.

All patients were subjected to-

1. A detailed analysis of intraoperative period for duration of surgery, complication like injury to gut or vessels during surgery, need of blood transfusion etc.
2. A detailed history analysis from day1 of surgery to number of hospital stay till discharge ,need of blood transfusions, or any other complication prolonging hospital stay.
3. From completion of treatment to 2 years postoperative period follow up will be analysed.

Primary outcome measurement- Progression-free survival (PFS) and overall survival.

Secondary outcome measurements by peri-operative death within 30 days Injuries (urinary tract, vascular, bowel, nerve) lymph oedema, lymphocyst formation, venous thrombo-

embolism, blood loss including need for transfusion.

Results and Observations

A total 49 patients underwent interval debulking surgery after NACT during the year 2013-2014. 45(91.8%) of patients met the conclusion criteria and hence included in the study. Amongst 45 patients only 11 patients underwent debulking surgery (24.4%).

Table 1 Demographic characteristics

	Control	Cases
Age (years)	42	44
Disease state		
IIC	27(79.4%)	9(81.8%)
IV	7(20.58%)	2(18.18%)
Tumour grade		
Grade 1	4(11.7%)	2(18.8%)
Grade 2	5(14.7%)	0
Grade3	25(73.5%)	9(81.8%)
Histological subtypes		
serous	31(91.1%)	11(100%)
endometrioid	03(8.8%)	0
Avg. no of NACT	3.4	3

Table no.2 Debulking surgery

	Control	Cases
Duration of surgery(hours)	2.6	3.5
Blood loss(ml)	195	350
Resection status		
R0	26(76.7%)	10(90.9%)
R1	5(14.7%)	1(9.1%)
R2	3(8.8%)	
Blood transfusion	11 (32.3%)	4(36%)
Bowel resection	none	None
Bowel injury	2	2

Table no.3 Post operative follow up period

Events	Control	Cases
Avg. no of days requiring drain	3	7
Median length of hospital stay(days)	9.2	11.2
Wound abscess	5(14.7%)	1(9%)
Lymphedema	8(23.5%)	5(45.5%)
Postoperative pneumonia	7(20.5%)	2(18.1%)

Table no.4 Lymph node dissection

Lymphadenectomy	Cases
Total no. of patients	11
Bulky nodes intraoperatively	11
Adequate status	11
Microscopically positive	02

Table 5 Overall survival

1 year = 97.8%
 2 year = 73.3%
 5 year = 57.8%

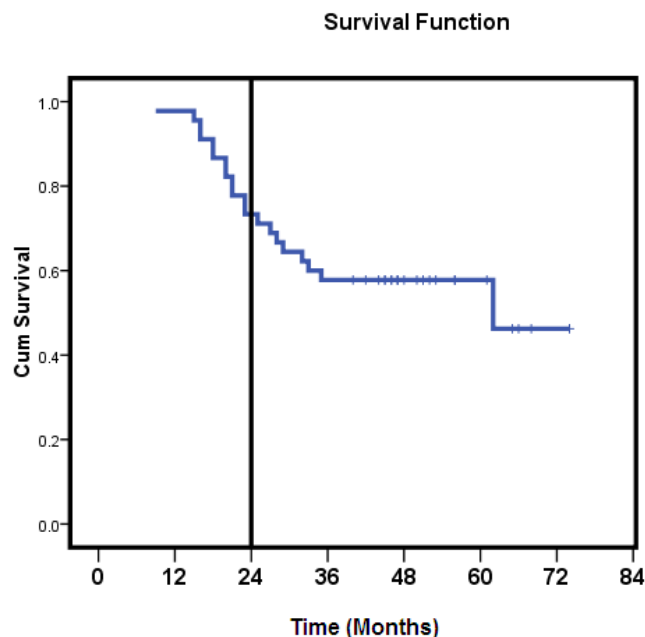


Table 6 Comparison of overall survival between both the groups

	1 year	2 Year	5 Year	P value
Control	97.1%	73.5%	58.8%	0.921
Cases		72.7%	54.5%	

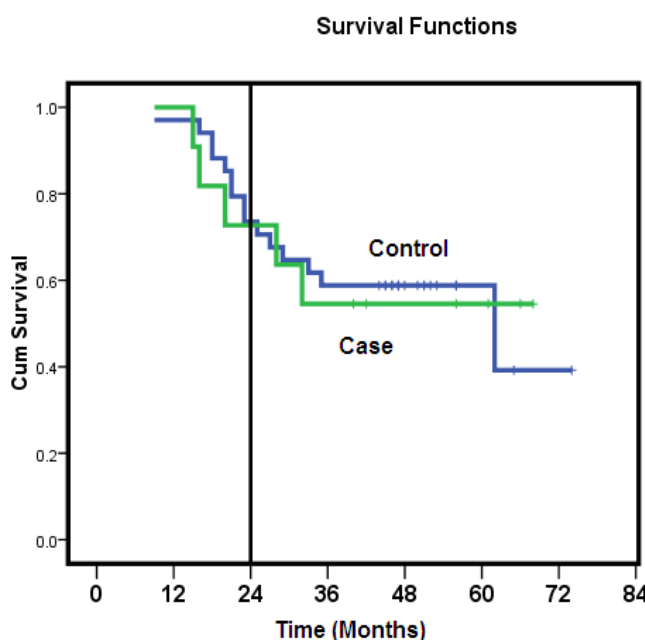
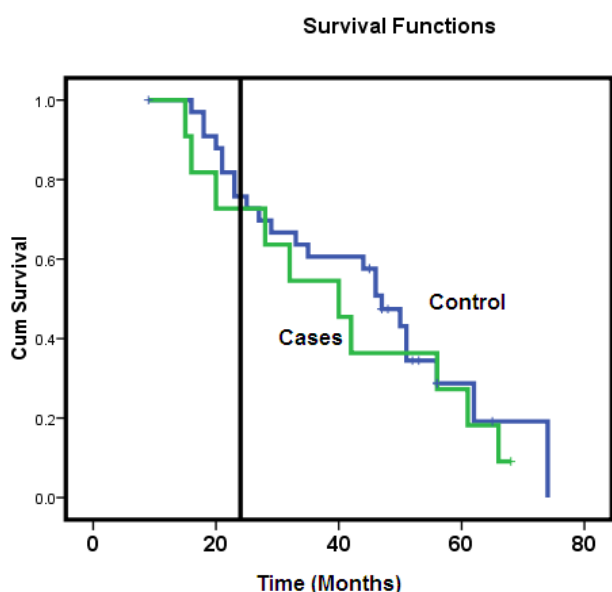
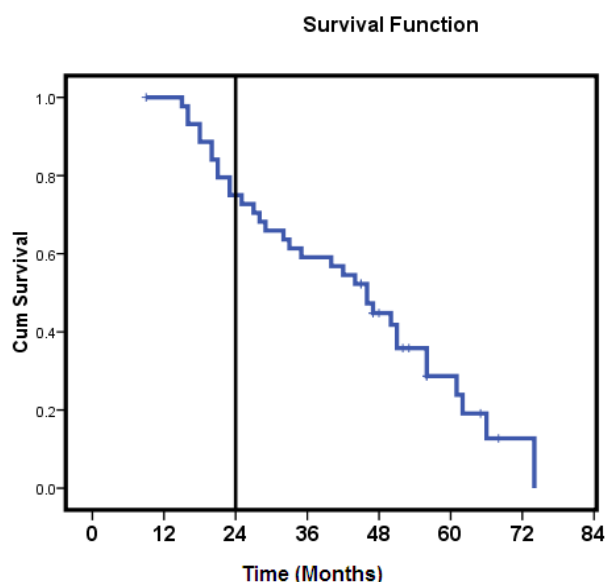


Table 7 Recurrence Free survival

	2 Year	5 Year	Median (Months)	P value
Overall_Recurrence free survival	75.0	28.7	46	
Control	75.8	28.7	47	0.55
Cases	72.7	27.3	40	



Discussion

Lymphdenectomy as a component of cytoreductive surgery has been strongly contested over a few years with retrospective studies claiming a survival benefit. The extent of lymphadenectomy is another debatable issue with some arguing for full paraaortic and pelvic nodal dissection in the optimally cytoreduced patients

while some recommends dissection of bulky nodes. Fagotti et al in retrospective study observed a 2 year progression free survival rate of 36 vs 25% (p=0.834), and 2-year overall survival rate of 69 vs 88% (p=0.777), between systematic lymphadenectomy compared with no lymphadenectomy during interval cytoreduction. They also noted significant higher operating time and more blood transfusion in the lymphadenectomy group. A non-significant trend of lesser nodal recurrence (4 vs 7%) was observed in the lymphadenectomy group.¹⁶ In our study we have seen that the overall survival difference in both the group is 26.8 vs 20.7%. the operating time between non lymphadenectomy vs. Lymphadenectomy groups are 2.6 hours vs. 3.5 hrs. In lymphadenectomy group the drain was kept fo longer duration (7vs. 3 days) and prolonged hospital stay 11.2 vs. 9.2 days and higher rate of lymphedema formation 45.5% vs 23.5% Iwase et al in a recent retrospective study noted that after interval debulking, despite positive pelvic nodes and paraaortic nodes identified in 39% of patients , no progression free or overall survival differences observed between systematic lymphadenectomy and no nodal dissection. This study also confirmed higher morbidity associated with systematic nodal dissection.¹⁷ our study also showed no difference in overall and progression free survival between the lymphadenectomy and non lymphadenectomy group. A similar result were also observed by Schwartz et al¹⁸

Conclusion

A pelvic lymphadenectomy for stage III and IV ovarian cancer during interval debulking surgery yields low positive results and also associated with higher morbidity. A routine lymphnode dissection also has no benefit over recurrence and progression or overall survival. Hence it can be omitted during interval debulking surgery.

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