
Neo-adjuvant Chemotherapy in Advanced Epithelial Ovarian Cancer (EOC): A Prospective, Randomized Study

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Purpose: To determine the impact of neo-adjuvant chemotherapy on surgical debulking rate, perioperative morbidity, overall & progression-free survival and quality of life in patients with advanced epithelial ovarian carcinoma.

Materials and Methods: Between October 2001 and December 2008, previously untreated patients of advanced epithelial ovarian carcinoma were randomized to (i) primary debulking surgery (PDS) followed by 6 cycles of paclitaxel and carboplatin (AUC 6) chemotherapy or (ii) neoadjuvant chemotherapy (NACT) group - wherein patients received 3 cycles of paclitaxel and carboplatin chemotherapy followed by debulking surgery followed by 3 more cycles of chemotherapy. Eligibility criteria included - age 18 to 65 years, biopsy / cytological proven EOC, adequate hematological, renal, liver & cardiac functions, normal upper & lower GI endoscopy & CEA levels. Both groups were compared for debulking rate, duration of surgery, blood loss, intra & postoperative morbidity & mortality, overall response to treatment and quality of life (QOL) using Functional Assessment of Cancer Therapy-Ovarian (FACT-O) questionnaire.

Results: One hundred and thirty three patients have completed the treatment till December

2008; 128 patients are evaluable - 62 in PDS group and 66 in NACT group. Five patients were detected to have histopathology other than EOC (Germ cell tumour-1, mixed mullerian tumour-2, dual primary-1 and krukenburg-1). Patients in NACT group had higher optimum debulking rate (86.2% vs 22.6%, $p < 0.0001$), decreased blood loss during surgery (mean vol 413 vs 600 ml, $p < 0.0001$), reduced postoperative infections (1.54% vs. 14.5%, $p < 0.025$), reduced operative time (89.2 vs 75.4 minutes, $p < 0.001$) and shorter hospital stay (7.6 Vs 11.5 days, $p < 0.001$). There was no significant difference in the chemotherapy toxicity in the 2 groups. At the median follow up of 42 months, estimated median overall survival is 42 and 41 months in PDS and NACT group, respectively ($p = 0.57$, HR 0.94, 95% CI: 0.56-1.56). The median progression free survival for both the groups was 15 months ($p = 0.41$, HR 1.1 95% CI: 0.71-1.86). QOL score was significantly better in NACT group at the end of treatment. (95 vs. 113, $p < .001$).

Conclusions: Neoadjuvant chemotherapy in advanced epithelial ovarian cancer is associated with higher optimum debulking rate with reduced postoperative morbidity and improved quality of life.

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