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# Follow-up of Epithelial Ovarian Cancer (EOC)

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SUDEEP GUPTA

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## INTRODUCTION

Approximately 60-80% of patients with EOC present with advanced stage disease (stage III and IV). About 70-80% of advanced stage patients achieve clinical complete remission with standard treatment i.e. maximal cytoreductive surgery followed by at least 6 cycles of chemotherapy. Unfortunately, more than 60% of such patients eventually suffer a relapse. In patients with early stage disease (stage I and stage II) a significant minority (10-40%) relapse after standard first-line treatment.

Developing recommendations for optimal follow-up of patients with EOC is a challenging task. The obvious goal of follow-up procedures is to detect recurrences early enough, such that retreatment at this time can offer a chance of long-term disease free survival. However, this intuitively appealing concept is complicated by the fact that there is a dearth of prospective studies evaluating the role and benefit of early salvage treatment.

## MODALITIES OF FOLLOW UP

The various modalities available for post treatment follow up of patients are physical examination, serum CA-125 levels and radiological studies like ultrasound, CT scan and MRI and recently PET scan.

Although routine physical examination is limited in its ability to detect small volume recurrent disease, it provides physicians an opportunity to perform other relevant tests including breast examination, pap smears, mammography and tests for recurrent ovarian cancer.

Serum CA-125 levels can be elevated in conditions other than EOC. In addition CA-125 may not be elevated in patients of EOC, especially those with early stage disease. However in pa-

tients of known EOC with initially elevated levels, CA-125 shows a good correlation (>80%) with clinical course. For e.g. in a patient who is on chemotherapy, two consecutive rising values of CA-125 at least 4 weeks apart, have >90% predictive value for chemo resistance. Elevations of CA-125 during follow up (confirmed by repeat testing) have a high accuracy for predicting subsequent clinical relapse. The median time from elevated CA-125 to objective tumors recurrence is 4 months (range 1-6 months). Overall, elevated and rising values of CA-125 in a known patient of EOC has high (>80%) positive predictive value for relapse; normal levels have lower negative predictive value (50-60%). The benefit of performing routine CA-125 during follow-up of a patient in remission is alertness of physicians and patients to subsequent clinical relapse and avoidance of patients presenting with advanced symptoms like intestinal obstruction. This has to be weighed against the anxiety and loss of treatment free time that results from such monitoring. In addition there is currently no proof that such monitoring has positive impact on survival.

CT scanning and ultrasound are the two most commonly employed radiological methods of follow-up. Both have limitations in detecting small lesions. CT scan is more accurate than ultrasound. In one study of clinically disease free patients who subsequently underwent 2<sup>nd</sup> look laparotomy<sup>1</sup>, the sensitivity, specificity, positive predictive value and negative predictive value of CT scan were 47%, 87%, 84% and 53% respectively. The overall accuracy was 63%. Sensitivity was high for retroperitoneal lymphnodes, abdominal mass, intrahepatic and splenic metastases and low for omental, mesenteric, peritoneal and bowel implants. However, it must be recognized that CT scanning technology has evolved in the past decade. Current generation spiral CT scanners with 3- dimensional reconstruction capability are likely to fare better on all these counts.

FDG PET scan is new modality for investigation and follow-up of patients with many different malignancies. It is expensive and currently available only at Radiation Medicine Centre, Mumbai. This facility is likely to be available soon in Delhi and other locations. Its role in follow-up of EOC is under active investigation.

Second look laparotomy has been shown to confer no advantage in terms of disease-free or overall survival and its use is currently limited to documentation of pathological complete response in clinical trials.

### Conclusion

To summarize, intensive follow-up surveillance of patients with EOC is limited by lack of proven efficacy of 2<sup>nd</sup> line interventions at the earliest asymptomatic stage of relapse compared to intervention at the time of clinical relapse. In the absence of large randomized trial results (one is underway) the following recommendations for follow-up of patients in clinical remission seem reasonable.

For early stage patients, office visit with physical examination once every 3 months for 2 years and then every 6 months for next 3 years

is suggested. For patients with initially elevated levels, serum CA-125, levels should be done at each visit. Radiological investigations (CT scan or ultrasound) are performed at the discretion of the physician. Some patients with very early stage disease (Stage IA/IB) who have not received adjuvant chemotherapy can be effectively salvaged at the time of relapse. For such patients it may be reasonable to perform radiological testing at each visit.

For advanced stage patients in clinical remission the same frequency of visits is recommended. CA-125 levels should be obtained at each visit. Radiological testing should only be performed to evaluate rising CA-125 values or a new symptom or sign. In this setting CT scanning should be preferred over ultrasound. Serological relapse is defined as a doubling of CA-125 value, confirmed by repeat testing. For patients who experience isolated serological relapse watchful waiting and Tamoxifen alone are both reasonable options.

### REFERENCES

1. DeRosa V, Mangoni di Stefano M, Brunetti A, et al: *Computed tomography and second-look surgery in ovarian cancer patients. Correlation, actual role and limitations of CT scan.* Eur J Gynecol Oncol 1995; 16: 123-129.