

COMPARISON BETWEEN MEASUREMENT OF PERITONEAL CANCER INDEX (PCI) BY MULTIDETECTOR COMPUTED TOMOGRAPHIC SCAN AND BY LAPAROTOMY AS AN INDICATOR FOR FEASIBILITY OF COMPLETE CYTOREDUCTION IN CASES OF ADVANCED EPITHELIAL OVARIAN CANCER

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Introduction

Ovarian cancer (OC) constitutes the seventh most common cancer among women. It is one of the most common gynecologic cancers being in the third rank after cervical and uterine cancers. OC is the most lethal gynecologic cancer. Peritoneal carcinomatosis is a terminal stage. Extensive seeding of the peritoneal cavity by tumor cells is often associated with ascites, particularly in advanced, high-grade serous carcinomas. These cancers grow rapidly, metastasize early, and have a very aggressive disease course. Prognostic factors in peritoneal carcinomatosis include: tumor histopathology, intraoperative assessment of the extent of carcinomatosis at time of surgical exploration (PCI index), CT PCI and the completeness of cytoreduction score (CCS). A complete surgical cytoreduction with removal of all macroscopic detectable tumor tissue remains the most important independent risk factor predicting survival. PCI score is a reliable tool helping to assess the extent of disease intraoperatively in advanced serous EOC patients. PCI score may also help predict complete surgical cytoreduction, however, a PCI cut-off score that has prognostic significance could not be extrapolated from this cohort.

Aim of the work

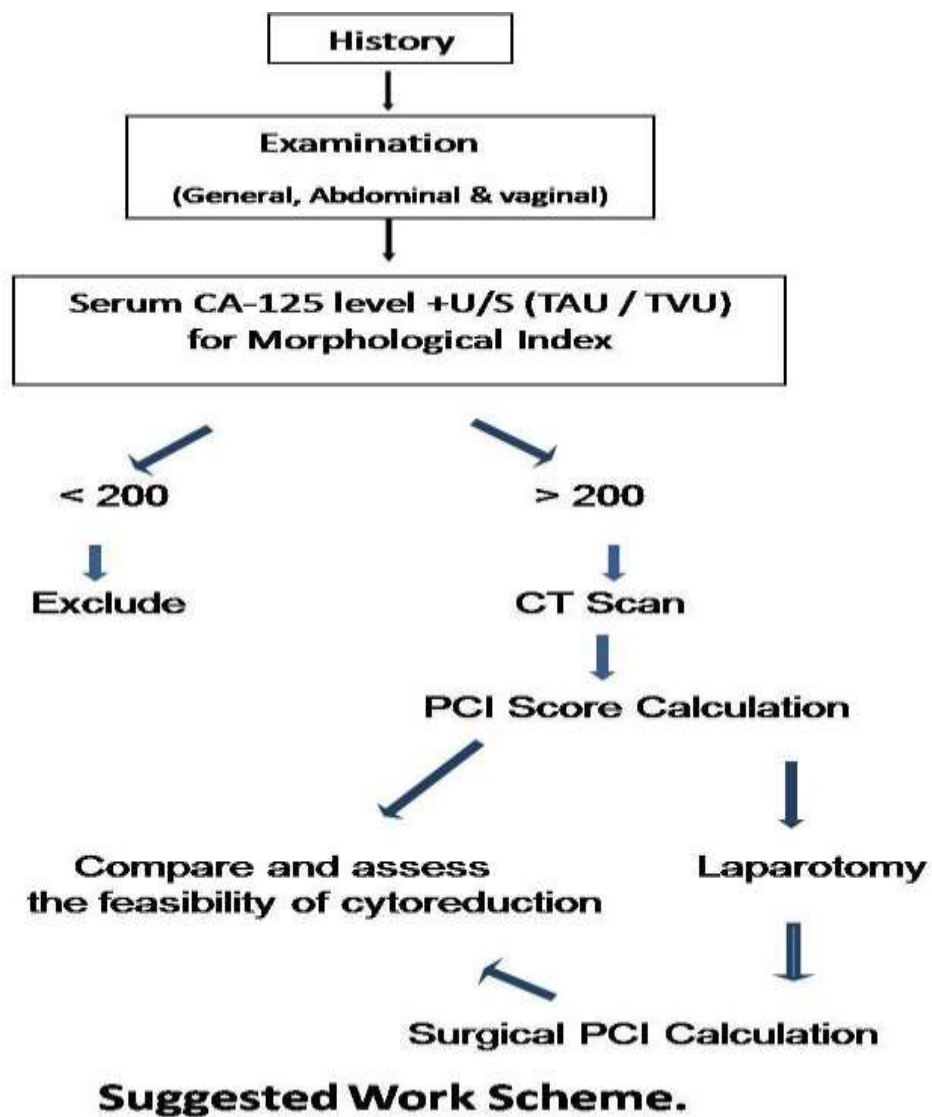
1. Comparing multidetector CT scan to laparotomy in calculation of Peritoneal Cancer Index (PCI) in cases of advanced epithelial ovarian cancer (stage III and IV).
2. To assess sensitivity and specificity of multidetector CT scan for feasibility assessment of complete cytoreduction in cases of advanced ovarian malignancy.

Patients and Methods

Fifty patients presenting with (stage III and IV) epithelial ovarian tumors attending Shatby Maternity University Hospital, Alexandria University were studied after taking a written consent and following the approval by the local ethics committee. RMI was calculated with a simplified regression equation obtained from the product of menopausal status score (M), ultrasonographic score (U), and absolute value of serum CA-125.

$$RMI = U \times M \times CA-125$$

Only cases with RMI > 200 were considered for CT scan evaluation. Surgical PCI was determined before and after cytoreduction. The total PCI score obtained by multidetector CT scan was compared to that obtained after laparotomy. The feasibility of cytoreduction was determined intraoperatively then was compared to that obtained by multidetector CT scan (Regarding the total number of PCI and cytoreductibility).



Results

Table 1: Correlation between the total PCI score by CT scan and surgically

	CT PCI	Surgical PCI
Range	3-24	2-25
Mean	8.01	8.5
S.D.	5.50	5.89
r	0.81	
p	0.001*	
Sensitivity	80.2	
Specificity	86.1	
PPV	84.1	
NPV	85.5	

Table 2: Sensitivity, specificity, PPV and NPV of CT scan in detecting PCI in the total regions, regions 0-8 and 9-12 in comparison to surgical PCI.

	Correlation	P-value	Sensitivity	Specificity	PPV	NPV
Regions 0-8	0.907	0.001*	88.0	92.0	90.0	93.0
Regions 9-12	0.21	0.209	52.0	50.0	63.0	48.0
Total region score	0.621	0.013*	77	79	70	74

Conclusion

We conclude from this study that the PCI score is a reliable tool helping to assess the extent of disease in advanced serous EOC patients and may help predicting complete surgical cytoreduction but can not qualify as a predictor of survival.