Title: The Peritoneal Cancer Index as a Predictor of Completeness of Cytoreduction at Primary and Interval Cytoreductive Surgery in Advanced Ovarian Cancer

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Abstract:

The peritoneal cancer index quantitatively assesses cancer distribution and tumour burden in the peritoneal cavity. The aim of this study is to evaluate the association between the peritoneal cancer index and the completeness of surgical cytoreduction for ovarian cancer and to identify a cut-off above which complete cytoreduction is unlikely.

Methods

This is a single-centre prospective cohort observational study. A total of 100 consecutive patients having ovarian cancer surgery were included. Peritoneal cancer index scores prior to and after surgery were calculated, and a cut-off value for complete cytoreduction was identified using a receiver operator characteristic (ROC) curve. Surgical complexity, blood loss, length of surgery and complications were analysed and associations to the peritoneal cancer index were evaluated.

Results

The overall median peritoneal cancer index (PCI) score was 9.5 (range; 0–36). The median age was 61 (range; 24-85). The most common stage was III and histologic subtype was high grade serous. Complete cytoreduction was achieved in 82% of patients, with a median score of 9. The remaining 18% had a median score of 28.5.

The best predictor of incomplete cytoreduction was the peritoneal cancer index score, with an area under the curve (AUC) of 0.928 (95% confidence interval [CI], 0.85-1.00). ROC curve analysis determined a PCI cut-off of 20. Major complications occurred in 15% of patients with peritoneal cancer index scores greater than 20, and 2.5% in patients with scores less than or equal to 20, which was statistically significant (p=0.014).

Conclusions:

In our study, we found that a score of 20 or less was associated with a high likelihood of complete cytoreduction. Incorporating the peritoneal cancer index into routine surgical practice and research may impact ovarian cancer treatment plans.

Biography:

Dr Paula J Fagan is a Gynecologist and Cancer Unit Surgeon at St George's University Hospital in London, England. With expertise in gynecologic cancer diagnostics and treatment, she has contributed significantly to evaluating the value of the peritoneal cancer index in primary and interval cytoreductive surgery in advanced ovarian cancer. Alongside her clinical role as an obstetrician and gynecologist at Imperial College London university hospitals, she concentrated her research fellowships in surgical and oncologic outcomes in gynecologic cancer at the Royal Marsden Hospital, London and cancer epidemiology at the International Agency for Research on Cancer (IARC), France. She has published global ovarian cancer incidence and mortality analyses by world region and Human Development Index, and is presently working on a worldwide analysis of endometrial cancer incidence and mortality rates.