Predictive Factors Affecting Prognosis Of Ovarian Cancer

Thesis
Submitted for Partial Fulfillment of Master Degree in Obstetrics and Gynecology

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Cairo 2012

ACKNOWLEDGEMENT

I wish to express my deepest gratitude and appreciation to Professor Magdy Mohammed Kamal, Professor of Obstetrics and Gynecology, faculty of medicine, Ain Shams University for his help, sincere guidance and support he offered throughout this work.

I would like to express my appreciation to Dr. Osama Ahmed Eltohamy, Assistant Professor of Obstetrics and Gynecology, faculty of medicine, Ain Shams University for his support throughout the preparation and development of this work.

I would like to express my deepest appreciation and gratitude to Dr. Ahmed Ibrahim, Assistant Professor of Obstetrics and Gynecology, faculty of medicine, Ain Shams University for his great support and valuable instructions throughout the preparation and development of this work.

I am also would like to express my deepest gratitude to the stuff of the Gynecologic Oncology Unit, Ain Shams University, Maternity Hospital, for the assistance and facilities they give to me to access Patient's data.

Lastly, I would like to thank all the patients and their families for their co-operation to achieve this work.

Habiba Mohammed Elhadidy

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LIST OF ABBREVIATIONS

ACS	**American Cancer Society**
AGO	**Arbeitsgemeinschaft Gyna¨kologische Onkologie**
BRCA1	**Breast Cancer Antigen 1**
BRCA2	**Breast Cancer Antigen 2**
CI	**Confidence Interval**
COC	**Combined Oral Contraceptive**
CR	**Complete remission**
CT	**Computerized Tomography**
DNA	**Deoxy Ribonucleic Acid**
ECOG	**Eastern Co-operative Oncology Group**
EOC	**Epithelial Ovarian Cancer**
EORTC	**European Organization for Research and Treatment of Cancer**
FIGO	**International Federation of Obstetrics and Gynecology**
GCT	**Granulosa Cell Tumor**
GOG	**Gynecologic Oncology Group**
HNPCC	**Hereditary nonpolyposis colorectal cancer**
HR	**Hazards Ratio**
HRT	**hormone replacement therapy**
ICON	**International Collaborative Ovarian Neoplasm**
IUCD	**Intra-uterine contraceptive device**
LDH	**Lactate Dehydrogenase**
MMMTs	**Malignant mixed mesodermal tumors**
MGCT	**Malignant Germ Cell Tumor**
MST	**Malignant Stromal Tumor**
MRI	**Magnetic Resonance Imaging**

NCDB	**National Cancer Data Base**
NCI	**The National Cancer Institute**
NEOC	**Non- Epithelial Ovarian Cancer**
OS	**Overall Survival**
PET	**Positron Emission Transfer**
PFS	**Progression Free Survival**
PIEPOC	**Prognostic index of epithelial ovarian cancer**
PMB	**Post menopausal bleeding**
PS	**Performance status**
QoL	**Quality of life**
RFS	**Recurrence-Free Survival**
RNA	**Ribonucleic acid**
SCST	**Sex-Cord Stromal Tumor**
SEER	**National Cancer Institute's Surveillance, Epidemiology, and End Results**
W.H.O	**World Health Organization**

Review of Literature

Chapter (1)

Introduction

Ovarian Cancer Malignancies

Introduction

Ovarian cancer is an uncommon disease that, unfortunately, is fatal in the majority of cases. It is the fifth leading cause of cancer-related deaths among females in the Western World and is the most lethal of all of the gynecological cancers ***(Jemal et al., 2005 and 2008).***

The lifetime risk of ovarian cancer is approximately 2%; a family history of ovarian cancer in a first-degree relative triples a woman's lifetime risk of developing ovarian cancer. The risk is further escalating with two or more afflicted first-degree relatives. Identification of high-risk patients with family members having ovarian, breast, or colon cancer is currently the best prevention strategy ***(National Cancer Institute, 2007).***

Currently, many centers offer ovarian cancer screening through CA-125 measurements and annual transvaginal ultrasound. Unfortunately, many efficacy studies have been conflicting, and recent studies have demonstrated ovarian cancer screening less effective, even in high-risk populations ***(Partridge et al., 2009 and Menon et al., 2009).***

Despite improved knowledge regarding the etiology of ovarian cancer, as well as application of aggressive cytoreductive surgery and combination chemotherapy with newly developed drugs designed to improve the five-year survival rate, however, ovarian cancer still remains the deadliest cancer of the female reproductive tract ***(Banks, 2000).***

For this reason, identification of prognostic factors predictive of outcome in patients with ovarian cancer may facilitate more targeted therapeutic regimens in the future.

A definition of a prognostic factor is a situation or a condition or a characteristic of a patient that can be used to estimate the probability of recovery from a disease or the probability of the disease recurring. Clinically, prognostic factors may help in individualizing treatment for patients. A predictive factor is a variable that can account for differences in the response to a given treatment and may be useful in the selection of patients likely to benefit from a specific therapy. Identification of new prognostic factors may facilitate the design of further clinical trials, help in inter-study comparisons, and guide the decision making process for individual patients. Unfortunately, however, the results of studies evaluating the different prognostic factors are often contradictory. There are some important requirements for a prognostic factor to be accepted routinely in clinical practice ***(Cervantes, 1997).***

- Its measurement should be reproducible and easily available.
- Its predictive value has to be substantially better than that of other recognized prognostic parameters.
- Its predictions should have therapeutic implications, interpretable by the clinician, and should offer benefit to the patient.
- Its value should be based on independently confirmed prospective studies.

Many studies have evaluated the survival of epithelial ovarian cancer (EOC) and its relation to established and proposed prognostic variables. In general, these studies have shown a poor long-term survival and that prognosis is related to factors such as age, stage, grade, histologic subtype, ascites, and performance status ***(Omura et al., 1991; Eisenhauer et al., 1999 and Clark et al., 2001).***

Other studies have implicated the importance of type of surgery, the training of the surgeon, and the kind of chemotherapy ***(Nguyen et al., 1993; Thigpen, 2000 and Giede et al., 2005),*** as ovarian cancer is highly responsive to platinum-based chemotherapy and the median survival and disease-free survival rates have steadily increased. On the other hand, a meta-analysis had indicated that treatment with cisplatin and disease stage are the only independent prognostic variables ***(Cannistra, 2004 and Jemal et al., 2008).***

In the last years, several investigations have assessed the clinical relevance of different biological variables evaluated in sera or tissue samples from patients with EOC in order to detect biomarkers able to predict either the response to chemotherapy or survival. Some investigators have developed prognostic indexes with good predictive power, incorporating objective prognostic variables. With the development of new genomic technologies, there is an opportunity to identify gene expression signatures that can be used to stratify patients according to their ultimate survival and response to chemotherapy ***(Spentzos D et al., 2004).***

In brief, validated predictive factors may provide important new therapeutic targets for improvement of patients' clinical outcome and prognosis.