

**A study of the effect of intraperitoneal chemohyperthermia
versus intraperitoneal chemotherapy in patients with malignant
ascites**

THESIS

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By
Waleed Fouad Fathallah
(M.B., B.ch, M.Sc.)

Supervisors

Prof. Dr.
Laila Ahmed Mohamed
Professor of Tropical Medicine,
Faculty of Medicine,
Cairo University

Prof. Dr.
Hosni Mohamed Salama
Professor of Tropical Medicine,
Faculty of Medicine,
Cairo University

Prof. Dr.
Farouk Ahmed Haggag
Professor of Oncology,
Faculty of Medicine,
Cairo University

**Faculty of Medicine,
Cairo University
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Abstract

Malignant ascites is one of the most serious complications of many malignant tumours. Many treatment modalities have been tried to eradicate cancer cells in ascitic fluid. In this study we compared the effect of intraperitoneal chemohyperthermia versus intraperitoneal chemotherapy in patients with malignant ascites. .We compared their effects on ascitic fluid cytology, quality of life and disease progression. We concluded that intraperitoneal chemohyperthermia can affect the viability of malignant cells in patients with malignant ascites with minimal adverse effects. Moreover intraperitoneal chemohyperthermia exerts better effects than intraperitoneal chemotherapy alone. We have also shown that quality of life in our patients has improved as patients experienced some relief of ascites related symptoms with regression of ascites.

Key Words: - Hyperthermia
 - Intraperitoneal

Table of contents

• Introduction-----	1
• Aim of work-----	5
• Review of literature-----	6
• Chapter (1)-Anatomy of the abdomen-----	6
• Chapter (2)-Malignant ascites-----	22
o Etiology-----	22
o Pathophysiology of malignant ascites-----	28
o Diagnosis-----	38
o Management-----	44
• Chapter (3)-Management of peritoneal carcinomatosis-----	50
o Introduction-----	50
o Colorectal carcinomatosis-----	50
o Gastric carcinomatosis-----	51
o Peritoneal surface malignancy treatments-----	52
▪ Surgical peritonectomy-----	53
▪ Intraperitoneal chemotherapy-----	56
▪ Hyperthermia-----	57
▪ Chemotherapy-----	58
o Results of clinical trials-----	60
▪ Appendiceal tumors-----	60
▪ Colorectal cancer-----	65
▪ Gastric cancer-----	69
▪ Ovarian cancer-----	81
o Novel Pharmacological Approaches to the Treatment of Malignant Ascites-----	90

• Chapter (4)-Prognostic indicators of peritoneal carcinomatosis-----	94
o Introduction-----	94
o Histopathology-----	95
o Intraperitoneal Assessment of the extent of Carcinomatosis--	99
o Gilly Peritoneal Carcinomatosis Staging-----	99
o Peritoneal Cancer Index-----	101
o Simplified Peritoneal Cancer Index-----	106
• Chapter (5)-Hyperthermia-----	109
o Background-----	109
o Scientific Rationale for the Use of Hyperthermia-----	111
o Techniques and Devices Used in Hyperthermia-----	117
o Toxicity of Hyperthermia Treatments-----	122
o Hyperthermia Combined With Regional Perfusion of a Chemotherapeutic Agent-----	123
o Systemic Hyperthermia and Chemotherapy-----	124
o Local/Regional Hyperthermia Combined With Chemotherapy- -----	125
o Triple Therapy-----	134
o Hyperthermia Alone-----	134
o Intraperitoneal chemohyperthermia-----	135
o Survival Results-----	136
• Subjects and methods-----	144
• Results-----	154
• Discussion-----	196
• Summary-----	207
• Conclusion-----	210

• Recommendations -----	211
• References -----	212
• Arabic summary -----	245

List of tables

Review of literature:

- **Table-1** Commonly used immunohistochemical stains in malignant tumours-----42
- **Table-2** Literature review of cytoreductive surgery and perioperative intraperitoneal chemotherapy as a treatment for mucinous appendiceal tumors with peritoneal dissemination-----64
- **Table-3** Results of phase II trials that combined aggressive cytoreduction with perioperative intraperitoneal chemotherapy for the treatment of patients with carcinomatosis of colorectal origin-----67
- **Table-4** First-line intraperitoneal chemotherapy: risk hazard ratios in favour of regional drug delivery-----85
- **Table-5** Quantitative prognostic indicators currently in use in patients with carcinomatosis-----95
- **Table-6** Histopathologic features of epithelial mucinous tumors of appendiceal, colonic and small bowel origin are designated as disseminated peritoneal adenomucinosis (DPAM) and peritoneal mucinous carcinomatosis (PMCA)-----98,99
- **Table-7** Gilly peritoneal carcinomatosis staging-----100
- **Table-8** Anatomic structures involved in the 13 abdominopelvic regions of the peritoneal cancer index (PCI)-----103,104
- **Table-9** Simplified Peritoneal Cancer Index-----106
- **Table-10** Cytotoxic interaction between anticancer drugs and hyperthermia-----113,114
- **Table-11** The use of local/regional hyperthermia and chemotherapy to treat far advanced cancer-----127-130

Results

- **Table-1** Demographic features of the studied groups-----172
- **Table-2** Clinical characteristics of the studied patients-----172
- **Table-3** Laboratory assessment of the studied patients-----173
- **Table-4** Ultrasonographic findings in the studied patients-----174
- **Table-5** Type of tumour in the studied patients-----174
- **Table-6** Correlation between serum tumour markers and different tumour types-----175

- **Table-7** Morphologic characteristics of ascitic fluid in the studied patients-----176
- **Table-8** Laboratory characteristics of ascitic fluid in the studied patients-----176
- **Table-9** Primary tumour pathology and cytological features of ascitic fluid in the studied patients-----177
- **Table-10** Follow up laboratory assessment of the studied patients after the procedures-----178
- **Table-11** Percent change in laboratory profile before and after the procedures-----179
- **Table-12** The adverse effects of the procedures on the studied patients within the 1st 48 hours-----180
- **Table-13** Clinical parameters used to evaluate the studied patients before and after the procedures-----181
- **Table-14** Follow up of ascitic fluid cytology in the studied groups after the procedures-----182
- **Table-15** The results of clinical parameters and cytology before the procedures versus 4 weeks after the procedures-----184
- **Table-16** Percent change in body weight, abdominal girth and viable malignant cells (Before vs. after 1W) versus (Before vs. after 4Ws) in the studied groups-----185
- **Table-17** Percent change in body weight, abdominal girth and viable malignant cells (Before vs. after 1W) in the studied groups-----186
- **Table-18** Percent change in body weight, abdominal girth and viable malignant cells (Before vs. after 4Ws) in the studied groups-----187

List of Figures

Review of literature

- **Figure-1** Vertical disposition of the peritoneum-----10
- **Figure-2** The peritoneum of the male pelvis-----13
- **Figure-3** Horizontal disposition of the peritoneum in the lower part of the abdomen-----15
- **Figure-4** Horizontal disposition of the peritoneum in the upper part of the abdomen-----16
- **Figure-5** Fluid and solute passage through the peritoneal cavity-----30
- **Figure-6** Proposed pathogenesis of malignant ascites-----35
- **Figure-7** Peritoneal cancer index-----102
- **Figure-8** The "Coliseum technique"-----133

Subjects and methods

- **Figure-1** SLH-100-----146
- **Figure-2** The pump-----147
- **Figure-3** Alarms indicators-----147
- **Figure-4** Program unit-----147
- **Figure-5** Operator program of the pump-----149
- **Figure-6** The disposable kit-----151

Results

- **Figure-1** Correlation between serum tumour markers and tumor type in patients with ovarian cancer-----175
- **Figure-2** Color of ascitic fluid in the studied patients-----176
- **Figure-3** Primary tumour pathology in the studied patients-----178
- **Figure-4** Laboratory profile before and after the procedure-----180
- **Figure-5** Adverse effects after the procedure-----181
- **Figure-6** Clinical parameters used to evaluate the studied patients before and after the procedures-----182
- **Figure-7** Follow up of ascitic fluid cytology in the studied groups after the procedures (viable cells)-----183
- **Figure-8** Follow up of ascitic fluid cytology in the studied groups after the procedures (degenerative cells)-----184
- **Figure-9** Follow up of ascetic fluid cytology in the studied groups after the procedures (necrotic cells)-----184

- **Figure-10** Percent change in body weight, abdominal girth and viable malignant cells (Before vs. after 1W) versus (Before vs. after 4Ws) in the studied groups-----186
- **Figure-11** Percent change in body weight, abdominal girth and viable malignant cells (Before vs. after 1W) in the studied groups-----187
- **Figure-12** Percent change in body weight, abdominal girth and viable malignant cells (Before vs. after 4Ws) in the studied groups-----188
- **Figure** change in mean value of malignant viable cells in ascetic fluid cytology over the follow up period in both groups.-----189

Cytology figures

- **Figure-1** Ascitic fluid cytology of a patient with history of breast cancer-----190
- **Figure-2** Ascitic fluid cytology of a patient with history of ovarian cancer-----190
- **Figure-3** Ascitic fluid cytology of a patient with history of ovarian cancer-----191
- **Figure-4** Ascitic fluid cytology of a patient with history of pelvic mass-----191
- **Figure-5** Ascitic fluid cytology examined after intraperitoneal chemohyperthermia (non vital stain)-----192
- **Figure-6** Ascitic fluid cytology examined after intraperitoneal chemohyperthermia (non vital stain)-----193
- **Figure-7** Ascitic fluid cytology examined after intraperitoneal chemohyperthermia (non vital stain)-----194
- **Figure-8** Ascitic fluid cytology examined after intraperitoneal chemohyperthermia (vital stain)-----195

List of abbreviations

- ADM-----Adriamycin.
- AMSA-----American Medical Student Association.
- Ara-C-----Cytarabine.
- b-FGF-----basic-fibroblastic growth factor.
- BLM-----Bleomycin.
- CA-125-----Cancer antigen-125.
- CCS-----Completeness of cytoreduction score.
- CEA-----Carcinoembryonic antigen.
- CT-----Computed tomography.
- DACH-----Diamino cyclohexane.
- DNA-----Deoxynucleic acid.
- DPAM-----Disseminated peritoneal adenomucinosis.
- DTIC direct intra arterial chemotherapy.
- EPIC-----Early postoperative intraperitoneal chemotherapy.
- FDA-----Food and Drug Administration.
- FIGO-----Federation of Gynecology and Obstetrics.
- 5FU-----5-fluorouracil.
- GIT-----Gastrointestinal tract.
- HIIC-----Hyperthermic intraoperative intraperitoneal chemotherapy.
- HIPEC-----Intraoperative hyperthermic intraperitoneal chemotherapy.
- HMB45-----Mouse monoclonal antibody.
- IDE-----Investigational Device Exemption
- IHCP-----Intraperitoneal hyperthermic chemoperfusion.
- IL-1-----Interleukin-1.
- IL-2-----Interleukin 2.
- IP-----Intraperitoneal
- IPCH-----Intraperitoneal chemohyperthermia.
- ISM-----Industrial, scientific, and medical.
- IV-----Intravenous.
- L-PAM-----L-phenylalanine mustard.
- LDH-----Lactate dehydrogenase.
- LS-----Lesion size.
- LTIC-----Long-term intraperitoneal chemotherapy.
- MMC-----Mitomycin C.
- Mo-----Month.

- NCI-----National Cancer Institute.
- NIH-----National Institute of Health.
- NK-----Natural killer cells.
- PC-----Peritoneal cancer.
- PCI-----Peritoneal Cancer Index.
- PMCA-----Peritoneal mucinous carcinoma.
- PVS-----Peritoneovenous shunting.
- RNA-----Ribonucleic acid.
- SPCI-----Simplified Peritoneal Carcinomatosis.
- TNF- α -----Tumour necrosis factor alpha.
- TNF-----Tumour necrosis factor.
- UCHL-1-----Ubiquitin carboxyl-terminal esterase L1.
- VEGF-----Vascular endothelial growth factor.
- VPF-----Vascular permeability factor/

Introduction

INTRODUCTION

Malignancy is the cause of ascites in 10% of patients who present with it (**Runyon., 1994**).

Malignant ascites most commonly results from peritoneal “studding” and occlusion of the diaphragmatic lymphatics leading to impaired reabsorption of abdominal fluid (**Zervos & Rosemurgy, 2001**). Malignant ascites may also result from inferior vena cava or hepatic vein obstruction secondary to primary or metastatic tumor infiltration of the liver; but this is less common (**Zervos & Rosemurgy, 2001**). Ovarian cancer is by far the most common cause of malignant ascites, accounting for almost 50% of all cases (**Ringenberg et al., 1989**). Occult malignancy accounts for an additional 20% of the cases and pancreatic, gastric, colon, lung, breast, and lymphoma comprise the remaining cases (**Ringenberg et al., 1989**).

When malignant ascites is suspected, every attempt should be done to document the nature and source of the ascites utilizing radiographic studies, cytology, fluid studies, and tumor markers (**Zervos & Rosemurgy, 2001**). Computed tomography scan should be obtained early because it is helpful not only in assessing the origin and extent of the malignant process but also the degree of peritoneal involvement (**Zervos & Rosemurgy, 2001**). Cytology may direct the workup, as do tumor markers in the case of occult or unknown primary processes, the most useful of which is CA-125 in women with suspected ovarian cancer (**Zervos & Rosemurgy, 2001**). Fibronectin levels and serum protein to ascites ratio are biochemical markers