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

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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 adenomucinosi.
- DTIC direct intra arterial chemotherapy.
- EPIC----------Early postoperative intraperitoneal chemotherapy.
- FDA----------Food and Drug Administration.
- FIGO----------Federation of Gynecology and Obstetrics.
- 5FU----------5-florouracil.
- 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 reabsorbtion 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