Management of Pain in the Intensive Care Unit

An Essay Submitted for Partial Fulfillment of the Master Degree in Anesthesiology

BY

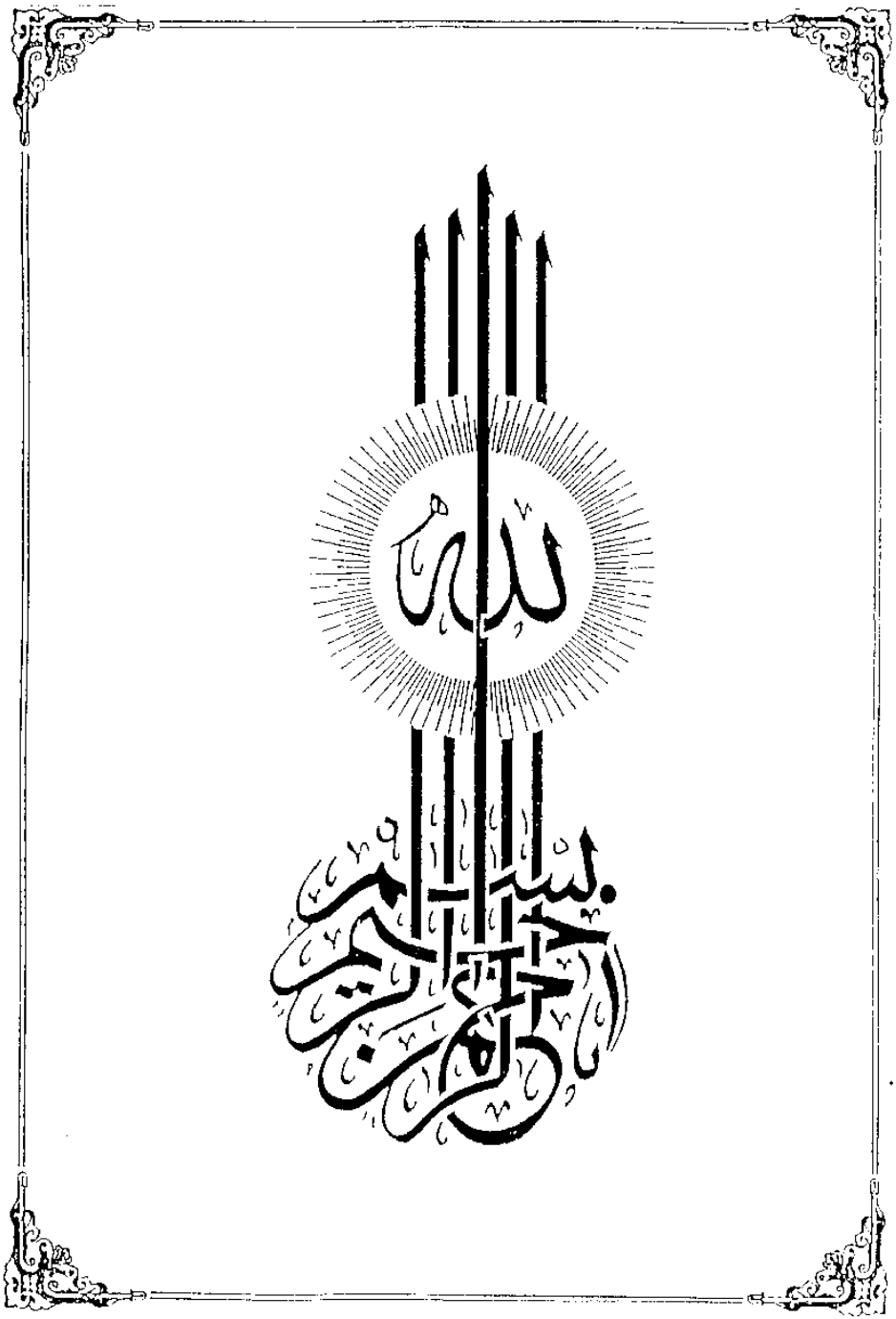
Sherif Hamdy Kandil
M.B.B.Ch., Faculty of Medicine, Ain Shams University

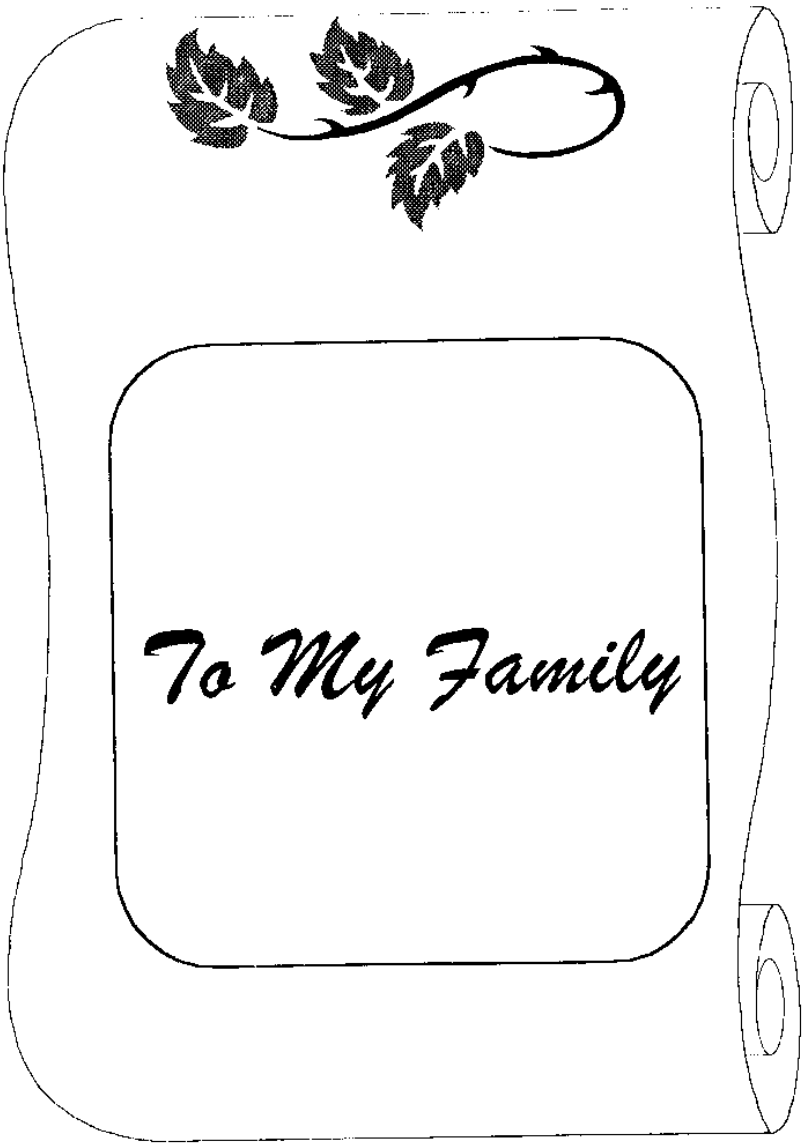
Supervised BY

Prof. Dr. Ahmed Gamal Eissa
Professor of Anesthesia and Intensive Care
Faculty of Medicine - Ain Shams University

Dr. Samia Abd El-Mohsen Abd El-Latif
Lecturer of Anesthesia and Intensive Care
Faculty of Medicine - Ain Shams University

Faculty of Medicine
Ain Shams University
*** 1998 ***





بسم الله الرحمن الرحيم

قالوا سبحانك لا علم لنا إلا ما علمتنا إنك أنت العليم الحكيم

صدق الله العظيم

سورة البقرة - الآية ٣٢

Acknowledgment

I would like to express my deep thanks and gratitude to my **Prof. Dr. Ahmed Gamal Eissa**, Professor of Anesthesia and Intensive Care, Faculty of Medicine, Ain Shams University, for giving me the honor of supervising this work which could not have been accomplished without his valuable support.

I would like to thank **Dr. Samia Abd El-Mohsen**, Lecturer of Anesthesia and Intensive Care, Faculty of Medicine, Ain Shams University, for her close supervision, continuous help, and the tremendous effort she has done in the meticulous revision of the whole work.

Sherif Kandil

List of Contents

Introduction

Introduction

By any reasonable code, freedom from pain should be a basic human right, limited only by our knowledge to achieve it *(Melzack, 1987)*.

The intensive care unit (ICU) is an extremely stressful environment where anxiety is prevalent, pain frequent, rest difficult, and sleep often impossible. Relief of pain and anxiety is often neglected while efforts focus on immediate life-threatening concerns. A growing awareness of ICU-imposed stress and the increasing popularity of some modes of mechanical ventilation have highlighted the need for effective sedation, analgesia and, occasionally, paralysis *(Wheeler, 1993)*.

The goal of therapy is to provide adequate analgesia and sedation without causing adverse autonomic or cardiopulmonary consequences. A balanced, multi-drug approach is usually the best way to maximize patient comfort and minimize side effects *(Wheeler, 1993)*.

Providing effective pain relief in the critical care unit is one of the most direct methods of decreasing postoperative complications and healthcare costs in high risk surgical patients *(Yeager et al., 1987)*. Nevertheless, the production of effective analgesia is elusive; the essential feature is to tailor the method to the patient, procedure, personnel, and institution *(Brown et al., 1992)*.

In some ways, it is easier to prescribe analgesia for critically ill patients than their healthier counterparts. The typical intensive monitoring and observation of these patients by highly skilled nurses allows the risk-benefit decisions to move towards more potent analgesic techniques, such as peridural narcotic-local anesthetic

mixtures. In contrast, in a ward patient, the risk and benefit analysis of these techniques is necessarily more problematic. Conversely, admission to the ICU postoperatively should not automatically encourage the use of a potent technique; the physiologic impairment of the patient must be weighed against expected benefits of the analgesic technique. Typically, more potent techniques are appropriate for thoracotomy, major upper abdominal surgery, or abdominal surgery in patients with pulmonary compromise from intrinsic lung disease, obesity or old age ***(Brown et al., 1992)***. These patients are the ones who have the most marked ventilatory compromise following operation or injury.

ICU patients at high risk of marked ventilatory compromise if analgesia is ineffective include:

1) Thoracic surgery.

2) Major upper abdominal surgery.

3) Abdominal surgery in pulmonary disease, morbid obesity, or extreme aging.

4) Blunt thoracic trauma.

(Brown et al., 1992)