



شبكة المعلومات الجامعية

Ain Shams University

Information Network

جامعة عين شمس

شبكة المعلومات الجامعية

@ ASUNET



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
على هذه الأفلام قد أعدت دون أية تغييرات



يجب أن

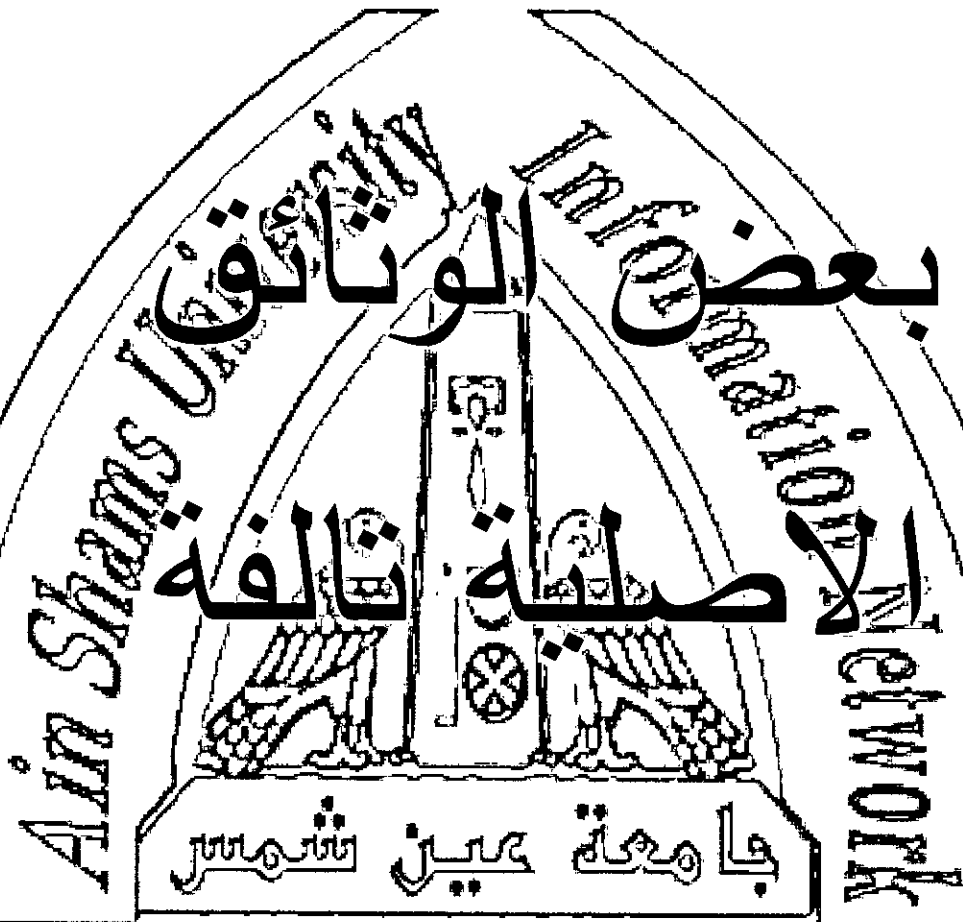
تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of
15-25- c and relative humidity 20-40%



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



شبكة المعلومات الجامعية
@ ASUNET



بالرسالة صفحات لح



شبكة المعلومات الجامعية

@ ASUNET

~~Star~~

COMPARISON OF THREE METHODS OF GRADUAL WITHDRAWAL FROM VENTILATORY SUPPORT DURING WEANING FROM MECHANICAL VENTILATION

~~Signature~~

THESIS

Submitted for the partial fulfillment of Master degree

*In
Anesthesiology*

By

Tarek Mohamed Esmail Nassar
(M.B., B.Ch.)

Signature

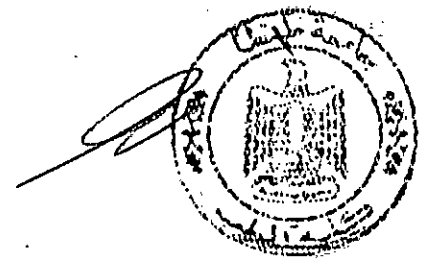
Supervisors

Prof. Dr.

Bayoumi Mohamed Abdel-hady Nassar

*Professor of Anesthesiology and
Intensive care*

*Faculty of Medicine
Tanta University*



Prof. Dr.

Mohamed Ahmed Mohamed Elharty

Professor of Anesthesiology

*Faculty of Medicine
Tanta University*

Signature

Faculty of Medicine
Tanta University

2002

Signature

CEACU

قَالَ اللَّهُ سِرِّمُوا بَنِي إِدْرِيسَ

لَعَلَّكُمْ تَعْلَمُونَ إِنَّكُمْ كُنْتُمْ عِندَ اللَّهِ عَاقِلِينَ

إِنِّي أَنزَلْنَاهُ فِي لَيْلَةِ الْقَدْرِ وَإِنْ سَأَلْتَهُ لَمَّا تَكُونُ فِي حُلِيِّهِ

صدق الله العظيم

آية ٣٢ سورة البقرة

ACKNOWLEDGEMENT

I feel indebted to **ALLAH** whose blessings on me cannot be counted.

I wish to express my sincere thanks and deep gratitude to my supervisors; **Prof. Dr. Bayoumi Mohamed Abdel-Hady Nassar** Professor of Anesthesiology and Intensive care, Faculty of Medicine, Tanta University , For his kind and valuable supervision and guidance throughout the steps of this work. My appreciation is beyond any words.

I also wish to thank **Prof. Dr. Mohamed Ahmed Mohamed Elharty** Professor of Anesthesiology, Faculty of Medicine, Tanta University for his help, support, and for his constructive advice and encouragement through the whole work.

My thanks and my best wishes to my patients without whom this work could not be possible.

*To the spirit of my Father
To my mother
and
To All my Family*

CONTENTS

INTRODUCTION	1
REVIEW OF LITERATURE	3
⊕ Mechanical ventilation	3
- <i>Objectives of mechanical ventilation.</i>	3
- <i>Indications of mechanical ventilation.</i>	6
- <i>Complications of mechanical ventilation.</i>	8
⊕ Weaning from mechanical ventilation.	12
- <i>Precautions taken before weaning</i>	13
- <i>Predictors of weaning outcome</i>	16
- <i>Weaning modes and methods</i>	25
- <i>Difficult weaning</i>	39
AIM OF THE WORK	52
PATIENTS & METHODS	53
RESULTS	61
DISCUSSION	92
SUMMARY AND CONCLUSION	101
REFERENCES	104
ARABIC SUMMARY	

INTRODUCTION

INTRODUCTION

Weaning from mechanical ventilation has been described as either the process of gradually decreasing ventilatory support to allow successful separation from the ventilator or determining when patients have the ability to be safely liberated from the ventilator⁽¹⁾.

Where as the majority of patients receiving mechanical ventilation require ventilatory support for a short duration, a significant number requires prolonged mechanical ventilation^(2,3,4).

Most patients receiving mechanical ventilation improve, allowing mechanical ventilation to be easily discontinued. However, some patients don't tolerate removal from the ventilator despite resolution of the initial process that prompted support. Dependence on the ventilator in these patients can be attributed to residual or premonitory compromise of the cardiorespiratory or neuromuscular system^(2,3,4,5,6).

In the last few years, a lot of articles have been written on weaning from artificial respiration, underscoring the interest in and the importance of this clinical issue. Many advances have been made regarding the optimal methods of reducing and removing patients from mechanical ventilation⁽⁷⁾.

Weaning techniques differ considerably from one another. Traditionally, Conventional mechanical ventilation with intermittent trials of spontaneous breathing using T-piece circuit, conducted one or more times a day, have been used to offer a gradual withdrawal from ventilatory support^(3,4).

Intermittent mandatory ventilation was introduced with a claim that it was superior to the traditional weaning approach. It allows the patient to breathe spontaneously between ventilator-delivered breaths, thus, weaning can be considered to begin with the institution of mechanical ventilation^(8,9).

In 1980s, pressure support ventilation become available, it provides a titrable pressure boost to every inspiratory effort, and weaning is accomplished by gradually decreasing the level of the pressure boost⁽³⁾.

Therefore, we designed this study to evaluate the efficacy of these three techniques of gradual withdrawal from mechanical ventilation in patients having acute on top of chronic ventilatory failure particularly, patients with chronic obstructive pulmonary disease (COPD) as they are the most susceptible to be difficult to wean⁽¹⁰⁾.

**REVIEW OF
LITERATURE**

REVIEW OF LITERATURE

MECHANICAL VENTILATION

Mechanical ventilation is a method of supporting intubated patients during illness and is not, in itself, a curative or therapeutic procedure. It should be withdrawn whenever the underlying pathophysiologic rationale for initiating mechanical ventilation is no longer present.

OBJECTIVES OF MECHANICAL VENTILATION⁽¹¹⁾.

The fundamental objectives for ventilatory support in acutely ill patients may be viewed physiologically and clinically.

A- Physiologic objectives

1-To support or otherwise manipulate pulmonary gas exchange:

(I) Alveolar ventilation.

In most applications of ventilatory support, the objective is to normalize the alveolar ventilation. In certain specific clinical circumstances, the objective may be to achieve an alveolar ventilation greater than normal (as in deliberate hyperventilation to reduce intracranial pressure), or adequate but less than normal (as in permissive hypercapnia or acute on chronic ventilatory failure).

(II) Arterial oxygenation.

A critical objective of mechanical ventilation is to achieve and maintain a level of arterial blood oxygenation that is acceptable for the clinical setting, using an inspired oxygen concentration that is also acceptable. In most applications of ventilatory support, this means an oxygen saturation (SaO_2) more than 90 percent.