Assessment of Nutritional Status of the Critically III Patients at Abbassia Respiratory Intensive Care Unit

Thesis
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Chest disease

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List of abbreviations

AA	Amino acids
AC	Arm circumference
Alb	Albumin
ALI	Acute lung injury
APACHE	Acute Physiology and Chronic Health
	Evaluation
ARF	Acute renal failure
ASPEN	American Society of Parenteral and Enteral
	Nutrition
ATP	Adenosine triphoshate
BCAA	Branched chain amino acids
BM I	Body mass index
BMR	Basal metabolic rate
BUN	Blood urea and nitrogen
Ca	Calcium
CBW	Current body weight
СНІ	Creatinine height index
СНО	Carbohydrate
Cm	Centimeter
Co2	Carbon dioxide
Cr	Creatinine
CRP	C- reactive protein
CRRT	Continuous renal replacement therapy
CSCN	Canadian nutrition society
CVP	Central venous catheter
DIT	Diet induced thermogenesis
2,3 DPG	Diphosphoglycerate
EFAD	Essential fatty acids deficit
EN	Enteral nutrition

☐ List of Abbreviations

EPA	Eicosa pentaenoic acid
ESPEN	European Society of Parenteral and
	Enteral Nutrition
ETF	Enteral tube feeding
FA	Fatty acids
G	Gram
GALT	Gut associated lymphoid tissue
GE	Gastric emptying
GLA	Gamm linoleic acid
GPX	Glutathione peroxidase
GRV	Gastric residual volume
Ht/H	Height
НВ	Harris Benedict equation
ICU	Intensive Care Unit
IEI	Integrated energy index
IL	Interlukin
IU	International unit
IV	Intravenous
IVFE	Intravenous fat emulsion
JJ	Surgical jeujenostomy
K	potassium
Kcal	Kilocalorie
Kg	Kilogram
LCT	Long chain triglycerides
LOS	Length of stay
MAC	Mid arm circumference
MALT	Mucosl associated lymphoid tissue
MAMA	Mid arm muscle area
MAMC	Mid arm muscle circumference
Mcg	microgram
MCT	Medium chain triglycerides

List of Abbreviations

MEq	Milli equilibrium
Mg	Magnesium
Mg	milligram
Ml	milliliter
Mm	millimeter
MNA	Mini nutritional assessment
MODS	Multiorgan Syndrome
MUAC	MID Upper Arm Circumference
MV	Mechanical Ventilation
Na	Sodium
NGT	Nasogastric Tube
NJT	Naso Jeujenal Tube
NPO	Nothing Per Oral
OBW	Optimal Body Weight
OGT	Orogastric Tube
P	Phosphate
PAR	Physical Activity Ratio
PEG	Percutaneous Endoscopic Gastrostomy
PEJ	Percutaneous Endoscopic Gastrostomy
	With Jeujenal Extension
PEM	Protein Energy Malnutrition
PICCS	Peripherally Inserted Central Catheters
PN	Parenteral Nutrition
PT	Prothrombin Time
PTT	Partial Thromboplastin Time
REE	Resting Energy Expenditure
RES	Reticulo-Endothelial System
RMR	Resting Metabolic Rate
SAPS	Simplified Acute Physiology Score
SFT	Skin Fold Thickness
SIADH	Syndrome Of Inappropriate Adh

☐ List of Abbreviations

	Secretion
SOFA	Sequential Organ Failure Assessment
TBW	Total Body Water
TEE	Total Energy Expenditure
TG	Triglycerides
TF	Transferrin
TLC/ TLymC	Total Lymphocytic Count
TNF	Tumor Necrosis Factor
TOBEC	Total Body Electrical Conductivity
TOF	Trans-Esophageal Feeding Tube
TPN	Total Parenteral Nutrition
TSF/ TST	Triceps Skin Fold Thickness
UBW	Usual Body Weight
USDA	United States Of Department Of
	Agriculture
UUN	Urinary Urea And Nitrogen
W	Weight
WC	Waist Circumference

Introduction

Although severity of illness is the single most important predictor of survival in critically ill patients, many questions exists about the contribution of nutritional status and the role of nutritional support to patients' outcomes (*Hill et al.*, 1995).

Nutritional support critically ill patients are often suboptimal, due to problems with both nutrient prescription and delivery (O'leary- Kelly et al., 2005).

Many critically ill patients are hypermetabolic and have increased nutritional needs, yet research on nutritional supplementations and the relationship of supplementations to clinical outcomes has produced mixed findings. (Mechanick et al., 2002)

The relationship between nutritional status and patients' outcomes is of particular interest in chronically critically ill patients, that is, patients who survive the lifethreatening phase of critical illness but have prolonged hospitalizations because of their dependence on critical care support services (*Daly et al.*, 1991).

Nutritional status is a multidimensional phenomenon that requires several methods of assessment, including nutrition related health indicators, nutritional intake, and energy expenditure (*Lee et al.*, 2003).

Aim of the work

To assess the nutritional status of critically ill patients admitted at Abbassia Respiratory Intensive Care Unit (RICU) and correlate it with the patients' final outcome.

Nutrition

Definitions:

Nutrition:

It is the science of food and its relationship to health.

Nutritional science:

These are sciences that deal with the natures and distribution of nutrients in food, their metabolic effects and the consequences of inadequate food intake.

Nutrients:

These are chemical compounds in food that are absorbed and used to promote health. They are generally divided into:

- 1) Macronutrients: they constitute the bulk of the diet and supply energy as well as essential nutrients needed for growth, maintenance and activity. They include CHO, fats, proteins, macro minerals (sodium, chloride, potassium, calcium, magnesium and phosphorus), and water.
- 2) Micronutrients_include vitamins and trace elements

3) Other dietary substances:

- Food additives e.g. preservatives emulsifiers, antioxidants, and stabilizers.
- Fiber.

Clinical nutrients:

It is the application of the principal of nutrition science and medical practice to the diagnosis, treatment, and prevention of human disease caused by the deficiency, excess, or metabolic imbalance of nutrition (*Beers and Berkow*, 1999).

Biochemical background

Definitions:

Intermediary metabolism:

It is the sum total of all enzymatic reactions occurring in the cell and has four specific functions:

- 1. To obtain chemical energy from fuel molecules.
- 2. To convert exogenous nutrients into building blocks of macro-molecular cell components.
- 3. To assemble such blocks into proteins, nucleic acids, lipids and other cell components.