بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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MONA MAGHRABY

The impact of parenteral nutrition support on nutrition care outcomes of hepatic encephalopathy patients in the intensive care unit

Thesis

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List of Abbreviations

Abbrev.	Full term
AAA	Aromatic Amino Acids
ASH	Alcoholic steatohepatitis
BBB	Bodies across the blood brain barrier
BCAA	Branched Chain Amino Acids
BCKDH	Branched-Chain α-Ketoacid Dehydrogenase
BIA	Bioelectric impedance analysis
CBF	Increased cerebral blood flow
DEXA	Dual-energy x-ray absorptiometry
DIC	Disseminated Intravascular Coagulation
FFM	Fat-free mass
FXR	Farnesoid X Receptor
GH	Growth Hormone
HE	Hepatic encephalopathy
HELLP	Hemolytic, elevated liver enzyme, and low platelet
HMG-CoA reductase	MethylGlutaryl Co-A reductase
IGF-1	Growth Factor-1
LCAT	Lecithin-Cholesterol Acyltransferase
LPS	Lipopolysaccharide
LP-X	Lipoprotein X
NO	Nitric oxide
NPO	Nothing per os
NSAID	Non-steroidal anti-inflammatory drug
PT	Prothrombin time
RXR	Retinoid X Receptor
SD	Standard deviation
SG	Serum Glutamic-Oxaloacetic Transaminase
SPSS	Statistical package for social science
TNF-α	Tumor Necrosis Factor-α

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Introduction

Appropriate nutritional support for critically ill patients is considered a marker of quality in ICU care and is associated with improved patient outcome. Despite this knowledge, it has been reported that >40% of ICU patients might be malnourished, and the experience from ICUs internationally is that a substantial number of patients receive suboptimal nutrition **(Wikjord et al., 2017).**

Critical illness is typically associated with a catabolic stress state in which patients demonstrate a systemic inflammatory response coupled with complications of increased infectious morbidity, multiple-organ dysfunction, prolonged hospital stays, and disproportionate mortality. Over the past 3 decades, exponential advances have been made in the understanding of the molecular and biological effects of nutrients in maintaining homeostasis in the critically ill population **(McClave et al., 2016).**

Specific patient populations addressed by these expanded and updated guidelines include organ failure (pulmonary, renal, and liver), acute pancreatitis, surgical subsets (trauma, traumatic brain injury, open abdomen, and burns), sepsis, postoperative major surgery, chronic critically ill, and critically ill obese. These guidelines are directed toward generalized patient populations, but like any other

management strategy in the ICU, nutrition therapy should be tailored to the individual patient **(McClave et al., 2016).**

Hepatic encephalopathy (HE) is defined as a reversible and metabolically induced neuropsychiatric complication, most commonly associated with cirrhosis, but may also be a complication of acute or chronic liver disease. The affected patients exhibit alterations in psychomotor functions, personality changes, cognitive impairment and disturbed sleep pattern **(Stepanova et al., 2012).**

Parenteral nutrition (PN) is indicated in alcoholic steatohepatitis (ASH) and in cirrhotic patients with moderate or severe malnutrition. PN should be started immediately when sufficient oral or enteral feeding is not possible. ASH and cirrhosis patients who can be sufficiently fed either orally or enterally, but who have to abstain from food over a period of more than 12 hours (including nocturnal fasting) should receive basal glucose infusion (2–3 g/kg/d). Total PN is required if such fasting periods last longer than 72 h. As in other critically ill patients PN in acute liver failure is indicated when the patient is considered unlikely to resume normal oral nutrition within the next 5–7 days irrespective of current nutritional state. PN is helpful in patients who cannot be fed adequately by enteral nutrition **(Plauth et al., 2010).**

Use of protocols and nutrition support teams has been shown to decrease PN-associated complications. Permissive under-feeding has also been shown to be a potential short-term approach to avoid some of these complications **(Wilson et al., 2012).**

Aim of the Work

The aim of this study is to evaluate the impact of a parenteral nutrition protocol on nutrition outcomes of hepatic encephalopathy patients admitted to the ICU.