Ain-Shams University
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Perioperative Heart Failure and Methods of Support

Essay

Submitted for Partial Fulfillment of Master Degree
in Anesthesia

By

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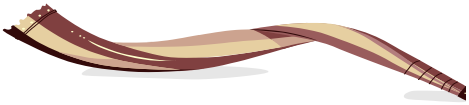

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Contents

List of Abbreviations

Abb.	Description
ACCF	American College of Cardiology Foundation
ACE	Angiotensin Converting Enzyme
ACS	Acute Coronary Syndrome
ACS-NSQIP	American College of Surgeons' National Surgical Quality Improvement Program risk
ADHF	Acute Decompensated Heart Failure
AHA	American Heart Association
AHF	Acute Heart Failure
ANP	Atrial Natriuretic Peptide
ARB	Angiotensin Receptor Blocker
AS	Aortic Stenosis
ASA	American Society of Anesthesiologists
ATP	Adenosine Triphosphate
AV node	Atrioventricular node
A-V valve	Atrio-Ventricular valve
BP	Blood Pressure
CAD	Coronary Artery Disease
cAMP	Cyclic adenosine monophosphate
cTn	Cardiac-Specific Troponins
CVD	Cardiovascular Disease
ECM	Extracellular Matrix
EF	Ejection Fraction
FiO2	Fraction of Inspired Oxygen
HCM	Hypertophic Cardiomyopathy
HF	Heart Failure
HFPEF	Heart Failure with preserved Ejection Fraction
HFREF	Heart Failure with Reduced Ejection Fraction
hsCRP	High Sensitivity C-Reactive Protein
IABC	Intra-Aortic Balloon Counterpulsation
ICD	Implantable Cardioverter Defibrillator
IHD	Ischemic Heart Disease
LA	Left Atrium

List of Abbreviations (Cont...)

Abb.	Description
LAD	Left Anterior Descending Artery
LCA	Left Coronary Artery
LCx	Left Circumflex Artery
LMWH	Low Molecular weight Heparin
LV	Left Ventricle
LVEF	Left Ventricular Ejection Fraction
MET	Metabolic Equivalent
MI	Myocardial Infarction
MR-proADM	Mid-regional pro-adrenomedullin
NT proBNP	N-Terminal Pro B-type Natriuretic Peptide
NYHA	New York Heart Association
OSA	Obstructive Sleep Apnea
PAC	Pulmonary Artery Catheter
PDA	Posterior Descending Artery
PDEI	Phosphodiesterase Inhibitors
PEEP	Positive End Expiratory Pressure
PIIINP	Collagen III N-terminal propeptide
PINP	pro collagen type I aminoterminal propeptide
RA	Right Atrium
RCA	Right Coronary Artery
RCRI	Revised Cardiac Risk Index
RV	Right Ventricle
SA node	Sinoatrial Node
SaO_2	Arterial Saturation of Hemoglobin with Oxygen
SR	Sarcoplasmic Reticulum
SVC	Superior Vena Cava
TEE	Transesophageal Echo
UFH	Unfractionated Heparin
VHD	Valvular Heart Disease

List of Table

List of Figures

Perioperative Heart Failure and Methods of Support

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Abstract

The term (Heart Failure) is often vaguely listed on the pre-anesthesia record and poorly characterized in patients for non-cardiac surgery. Furthermore, many aspects of heart failure are poorly understood. Every anesthesia provider must be familiar with the definition, classification, pathogenesis, and treatment strategies associated with HF. In contrast to the common clinical presentation of heart failure, the causes of heart failure are widely variable. Growing evidence suggests that there are unique characteristics in risk factors, pathophysiology, treatment, and outcomes in systolic vs. diastolic heart failure. While there is no single test that confirms the diagnosis of heart failure, the categorical feature of systolic HF is an EF (ejection fraction) less than 40%, compared to an EF greater than 50% in diastolic HF, while individuals with an EF between 41 and 49% are considered intermediate.

Conclusion: In patients with a moderate or poor functional capacity, consider the risk of the surgical procedure. Patients scheduled for intermediate-risk surgery can proceed for surgery; statin therapy and a titrated low-dose β-blocker regimen appears appropriate prior to surgery.

Keywords: Heart Failure, Ejection fraction

Introduction

Aim of the Work

Chapter (1)

Physiology of Cardiac Muscle

Chapter (2)

Pathophysiology of Heart Failure

Chapter (3)

Perioperative Diagnosis of Heart Failure

Chapter (4)

Perioperative Control of Heart Failure and Methods of Support