

1. Record Nr.	UNINA9910743353303321
Titolo	Acute respiratory distress syndrome : advances in diagnostic tools and disease management // edited by Sadatomo Tasaka
Pubbl/distr/stampa	Singapore : , : Springer, , [2022] ©2022
ISBN	981-16-8370-0 981-16-8371-9
Descrizione fisica	1 online resource (182 pages)
Collana	Respiratory Disease Series: Diagnostic Tools and Disease Managements
Disciplina	381
Soggetti	Disease management Síndrome del destret respiratori de l'adult Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Intro -- Preface -- Contents -- Part I: Definition, Epidemiology, and Pathophysiology -- Chapter 1: Definition of ARDS: Does the Berlin Definition Fit the Clinical Entity and Predict the Outcome? -- 1 Introduction -- 2 Before 1967 -- 3 1967-1992 -- 3.1 First Report of ARDS by Ashbaugh and Colleagues -- 3.2 Murray's Definition with Lung Injury Score -- 4 1992-2012 -- 4.1 AECC Definition -- 4.2 Limitation of AECC Definition -- 4.3 DELPHI Definition -- 5 After 2012 -- 5.1 Berlin Definition -- Draft Definition -- 5.2 Berlin Definition -- Empirical Evaluation of the Draft Definition -- 5.3 Berlin Definition -- Limitation of the Berlin Definition -- 5.4 Future Perspective -- 6 Conclusion -- References -- Chapter 2: Epidemiology and Risk Factors of ARDS: How Many Is the Real Incidence of ARDS? -- 1 Introduction -- 2 Epidemiology -- 2.1 Incidence of ARDS -- 2.2 Clinical Risk Factors -- 2.3 Comorbidities and Susceptibility to ARDS -- 2.4 Hospital-Based Modifiable Exposures and ARDS -- 2.5 Interaction of Factors as Risk Enhancement -- 3 Mortality of ARDS -- 3.1 Mortality Related to Severity of ARDS -- 3.2 Mortality Related to the Cause of Lung Injury -- 3.3 Ventilatory Strategy and Mortality -- 3.4 Trends in Mortality -- 3.5 Mortality Related to Organizational Factors -- 3.6 Mortality Related

to Unmodifiable Factors -- 3.7 Genetic Factors and ARDS -- 3.8 Outcomes Other than Mortality -- 3.9 Quality of Life After ARDS -- 4 Conclusions -- References -- Chapter 3: Pathophysiology of ARDS: What Is the Current Understanding of Pathophysiology of ARDS? -- 1 Introduction -- 2 Genetic Factors -- 3 Innate Immunity -- 4 Cellular and Molecular Pathogenesis -- 4.1 Accumulation of Neutrophils in the Lungs -- 4.2 Neutrophil-Derived Substances -- 4.2.1 Reactive Oxygen Species -- 4.2.2 Proteolytic Enzymes -- 4.2.3 Neutrophil Extracellular Traps. 4.3 Impairment of Endothelial and Epithelial Barrier Functions -- 5 Development of Permeability Edema -- 6 Changes in the Pulmonary Circulation During ARDS -- 6.1 Hypoxic Pulmonary Vasoconstriction -- 6.2 Increased Pulmonary Vascular Tone -- 6.3 Coagulation Abnormality -- 7 Pathophysiology -- 7.1 Intrapulmonary Shunt -- 7.2 Changes in Ventilation Mechanics -- 7.2.1 Decreased Lung Compliance (Hardening of the Lungs) -- 7.2.2 Increased Respiratory Resistance -- 7.3 Impaired Diffusing Capacity -- 7.4 Ventilation-Perfusion Mismatch -- 7.5 Elevated Pulmonary Vascular Resistance -- 7.6 Pulmonary Surfactant Dysfunction -- 7.6.1 Pulmonary Surfactant Dysfunction During ARDS -- 7.6.2 Influence of Respiratory Management on Pulmonary Surfactant -- 8 Assessment of Respiratory Function of ARDS Patients -- 8.1 Practical Assessment of Respiratory Function -- 8.2 Exhaled Gas Analysis -- 8.3 Evaluation of Lung Volume and Regional Lung Function by Chest CT -- 9 Conclusion -- References -- Part II: Diagnosis -- Chapter 4: Imaging Diagnosis of ARDS: How Can We Know the Severity and Prognosis from the Lung Imaging? -- 1 Introduction -- 2 Chest Radiograph -- 3 Chest HRCT -- 4 Conclusion -- References -- Chapter 5: Serum Markers of ARDS: How Can We Know the Severity and Prognosis from the Serum Markers? -- 1 Introduction -- 2 Serum Biomarkers Associated with Prognosis in ARDS -- 2.1 Biomarkers Associated with Coagulation and Fibrinolysis -- 2.2 Biomarkers Associated with the Inflammatory Cascade -- 2.3 Biomarkers Associated with Endothelium Damage -- 2.4 Biomarkers Associated with Epithelium Damage -- 3 What Is the Useful Biomarker for Coronavirus Disease 2019 (COVID-19)-Related ARDS? -- 4 Conclusion -- References -- Part III: Management -- Chapter 6: Ventilatory Management for Patients with ARDS: Established and Rapidly Evolving Strategies -- 1 Introduction. 2 Ventilator-Induced Lung Injury -- 3 "Classical," or Established, Recommendations in Ventilatory Settings -- 3.1 Limiting Tidal Volume on the Basis of Predicted Body Weight and Plateau Airway Pressure -- 3.2 Selecting Positive End-Expiratory Pressure from Positive End-Expiratory Pressure/FiO₂ Tables -- 3.3 Prone Positioning -- 4 Emerging Strategies in Lung Protection and Underlying Pathophysiology -- 4.1 Using Driving Pressure (P) to Identify an Individualized Acceptable Tidal Volume -- 4.2 Transpulmonary Pressure and Esophageal Pressure Monitoring -- 4.3 Patient Self-Inflicted Lung Injury and Controlling Patients' Inspiratory Effort -- 5 Considerations for Managing ARDS Patients with COVID-19 -- 5.1 Poor Correlation Between Hypoxia Severity and Reduction in FRC -- 5.2 Persistent Strong Inspiratory Effort and High Incidence of Re-intubation -- 6 Conclusions -- References -- Chapter 7: Noninvasive Ventilation and High-Flow Oxygen Therapy for ARDS: Does Noninvasive Ventilatory Management Improve the Outcome of ARDS Patients? -- 1 Introduction -- 2 Noninvasive Ventilation -- 2.1 Background -- 2.2 Mechanism -- 2.3 Evidence -- 2.3.1 Comparison with Intubation and Mechanical Ventilation -- 2.3.2 Comparison with Oxygen Therapy -- 2.4 Actual Setting Method of NIV -- 2.4.1 Indications for NIV -- 2.4.2 Initial

Settings and Method of Introduction of NIV -- 2.4.3 Types of NIV -- 2.5 New Era of NIV in ARDS -- 3 High-Flow Nasal Cannula Oxygen Therapy -- 3.1 Background -- 3.2 Mechanism -- 3.2.1 Maintenance of Airway Mucociliary Clearance -- 3.2.2 Effect of Washing Out Anatomical Dead Space -- 3.2.3 Accurate Setting of Inspiratory Oxygen Fraction at High Concentrations -- 3.2.4 PEEP-Like Effect and Alveolar Recruitment -- 3.3 Evidence -- 3.4 Actual Setting Method of HFNC -- 3.4.1 Indications for HFNC -- 3.4.2 Initial HFNC Settings and Method of Introduction.

4 Conclusion -- References -- Chapter 8: Fluid and Nutritional Management of ARDS: What Is the Ideal Fluid and Nutritional Management for an ARDS Patient? -- 1 Introduction -- 2 Fluid Balance -- 2.1 Animal Studies -- 2.2 Current Evidences -- 2.3 Significant Considerations for Conservative Fluid Management -- 2.4 Recent Advances -- 2.5 Combined Use of Diuretics and Albumin -- 3 Nutrition -- 3.1 Current Guidelines -- 3.2 Target Energy -- 3.3 Management of Blood Glucose Level -- 3.4 Avoiding Refeeding Syndrome -- 3.5 Current Evidences for Omega-3 Fatty Acids -- 3.6 Possible Benefit of Other Nutrients -- 3.7 Nutritional Management for COVID-19 -- 4 Conclusion -- References -- Chapter 9: CHDF and ECMO for ARDS: Does CHDF and ECMO Improve the Outcome of ARDS Patients? -- 1 CHDF -- 2 ECMO -- 2.1 Establishment of ECMO for Respiratory Failure -- 2.2 Indications of ECMO for Adult Respiratory Failure -- 2.3 Practice of ECMO Management for Respiratory Failure -- References -- Chapter 10: Physiotherapy and Early Rehabilitation for Patients with ARDS: Does Physiotherapy Improve the Functional Outcome of ARDS Patients? -- 1 Introduction -- 2 Functional Disabilities in ARDS Survivors -- 2.1 Physical, Functional, and Health-Related Quality of Life Impairments -- 2.2 Detrimental Effects of Bed Rest -- 2.3 ICU-Acquired Weakness -- 2.4 ICU-Acquired Delirium -- 2.5 Post Intensive Care Syndrome in ARDS Patients -- 3 Physiotherapy Program -- 3.1 Aim -- 3.2 Components of a Physiotherapy Program -- 3.2.1 Respiratory Physiotherapy -- 3.2.1.1 Body Positioning -- 3.2.1.2 Airway Clearance Techniques -- 3.2.1.3 Inspiratory Muscle Training -- 3.2.2 Early Mobilization -- 3.2.2.1 Passive Mobilization -- 3.2.2.2 Active Exercise and Progressive Mobilization -- 4 Physiotherapy Practice for Patients with ARDS -- 4.1 Acute Phase -- 4.2 Earlier Stages in Stable Phase -- 4.3 Stable Phase.

4.4 Recovery Phase During ICU Stay -- 4.5 Recovery Phase After ICU Discharge -- 5 Evidence on Physiotherapy in Patients With ARDS -- 6 Conclusion -- References -- Part IV: Current Topics -- Chapter 11: MicroRNAs and Extracellular Vesicles for Diagnosis of ARDS: Can MicroRNAs and Extracellular Vesicles Be Helpful for Early Diagnosis or Risk Evaluation of ARDS? -- 1 Introduction -- 2 MicroRNAs in ARDS -- 3 Extracellular Vesicles in ARDS -- 4 Conclusion -- References -- Chapter 12: Stem Cell Therapy and Regenerative Medicine for ARDS: Can Stem Cell Therapy and Regenerative Medicine Contribute to the Protection or Recovery of the Injured Lungs? -- 1 Introduction -- 2 Alveolar and Airway Cell Lineages in Lung Repair and Regeneration -- 3 Mesenchymal Stem/Stromal Cells -- 4 Potential Mechanisms of Mesenchymal Stem Cell Actions in ARDS -- 5 MSC Clinical Trials for ARDS and COVID-19 -- 6 Other Stem Cell Therapies -- 7 Conclusion -- References -- Chapter 13: Imaging Technique for Ventilatory Management of ARDS Patients: Novel Monitoring Tool-Electrical Impedance Tomography -- 1 Introduction -- 2 Imaging Techniques -- 2.1 Imaging Modality for Evaluation of Lung Morphology and Function -- 2.2 EIT: The Difference from Other Modalities -- 3 Roles of EIT in Clinical Practice -- 3.1 Evaluation of Ventilatory Settings

and the Effect of Therapeutic Interventions -- 3.1.1 Ventilatory Settings in ARDS -- 3.1.2 Therapeutic Interventions: Prone Position -- 3.1.3 Evaluation of Therapeutic Interventions: ECMO -- 3.2 Monitoring of Assisted Ventilation with Spontaneous Breathing -- 3.2.1 Assessment of Ventilation with Respiratory Effort -- 3.2.2 Therapeutic Interventions: Muscle Relaxant -- 3.3 EIT-Guided Respiratory Management -- 4 Conclusions -- References.
