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Welcome Address

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III Einstein International Symposium on Intensive Care and the XXX International Symposium on Mechanical Ventilation of *Hospital Israelita Albert Einstein*
August 16-18, 2023

The organization of a scientific event requires the collaborative effort of numerous individuals, each playing an essential role in developing a comprehensive, up-to-date, and robust scientific program. By hosting the "III Einstein International Symposium on Intensive Care" and the "XXX International Symposium on Mechanical Ventilation of *Hospital Israelita Albert Einstein*," the Department of Critically Ill Patients, in collaboration with *Hospital Israelita Albert Einstein*, reaffirms its commitment to bringing together acclaimed experts in the fields of intensive care and critical patient care nationally and internationally.

Among the presentations and discussions held during this event, the publication of abstracts from the selected papers presented will contribute to the advancement of knowledge, facilitating the dissemination of information in pursuit of optimal care practices.

With a long and proud history of publishing high-quality scientific content in several areas of medicine, we take great satisfaction in presenting the abstracts of scientific papers in this edition of the Journal **einstein** (São Paulo).

We express our sincere gratitude to all participants for their invaluable contributions.

The Organizing Committee

Committees

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- Roseny dos Reis Rodrigues – Intensive Care Physician at the Critical Care Department – *Hospital Israelita Albert Einstein, São Paulo, SP,* Brazil.
- Telma Antunes – Pulmonologist – *Hospital Israelita Albert Einstein, São Paulo, SP,* Brazil.
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- Thiago Domingos Corrêa – Critical Care Department Medical Manager – *Hospital Israelita Albert Einstein, São Paulo, SP,* Brazil.
- Walace de Souza Pimentel – Intensive Care Unit Physician On-Duty – *Hospital Israelita Albert Einstein, São Paulo, SP,* Brazil.

Speakers

International Speakers

Adrian Wong

Adrian has been a consultant in anaesthesia & intensive care since 2015 and is a consultant at King's College Hospital, London. Within the field of ultrasound, he has interested in training/accreditation, measurements of organ perfusion and right heart imaging. His other research interest includes clinical governance and safety, medical education and burnout/well-being amongst medical professionals.

Ary Serpa Neto

Australian and New Zealand Intensive Care Research Centre (ANZIC-RC), School of Public Health and Preventive Medicine, Monash University, Melbourne, Australia; Department of Critical Care, Melbourne Medical School, University of Melbourne, Austin Hospital, Melbourne, Australia; Department of Intensive Care, Austin Hospital, Melbourne, Australia; Department of Critical Care Medicine, *Hospital Israelita Albert Einstein*, São Paulo, Brazil.

Antonio Capone Neto

Consultant in Quality and Safety Management for Empattica since 2023, Project Director at Institute for Healthcare Improvement, 2020-2022, Medical Manager of Patient Safety at *Hospital Israelita Albert Einstein*, 2015-2018 and Coordinator of the Intensive Care Center at *Hospital Israelita Albert Einstein*, 2010-2014. Visiting Professor in Intensive Care at the University of Toronto, Canada 2009-2010.

Chiara Robba

Chiara Robba is a Consultant in Neuro and General Intensive Care at Policlinico San Martino, Genova. She worked for many years at Addenbrookes Hospital, in Cambridge and she got a Ph.D. in Neuroscience under the supervision of Prof. Marek Czosnyka. She is currently Chair of the Neuro Intensive Care section of the ESICM (European Society of Intensive Care Medicine. Her research interests are mainly on Neuromonitoring, autoregulation and mechanical ventilation.

Daniel De Backer

Head of Intensive Care, CHIREC, Belgium; Professor of Intensive Care, Université Libre de Bruxelles, Brussels, Belgium; Past President of the ESICM (European Society of Intensive Care Medicine).

Marcus Josephus Schultz

Prof. Schultz is widely known and admired for his scientific productivity, he is one of the most highly cited Critical Care researchers in the world. He is a founding member of the PROVE Network and of CRIT CARE ASIA. Dr. Schultz holds the Endowed Chair in Experimental Intensive Care at the University of Amsterdam since 2008. He served as a leading investigator of several observational studies and randomized clinical trials.

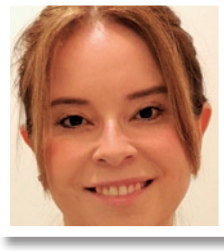
National Speakers

Adriano José Pereira

Ph.D. in Health Sciences from the *Universidade de São Paulo;* Post-Doctorate from the University of Bern (Switzerland) and the Free University of Brussels (Belgium); Permanent Professor at the *Stricto Sensu* Post-Graduation Program of the *Faculdade Israelita de Ciências da Saúde Albert Einstein, Hospital Israelita Albert Einstein*; Intensive Care Physician at the *Hospital Israelita Albert Einstein*; Medical Coordinator of the Tele-ICU Service and Analytics Consultant of the Big Data Department of the *Hospital Israelita Albert Einstein*.

Airton Leonardo de Oliveira Manoel

Coordinator of the Intensive Care Unit at Hospital Geral do Grajaú, São Paulo, SP, Brazil; Associate Professor at the Department of Internal Medicine at *Universidade de Santo Amaro*, São Paulo, SP, Brazil; Clinica Fellow Critical Care and Neurocritical Care, University of Toronto, Canada, 2011-2014.



Alejandra del Pilar Gallardo Garrido

Graduated from the *Faculdade de Medicina, Universidade Federal de Santa Catarina*; Specialist in Intensive Care Medicine from AMIB (Brazilian Intensive Care Medicine Association); Ph.D. in Sciences from *Faculdade de Medicina, Universidade de São Paulo*.

Alexandre Marini Ísola

Physician Manager of the Continuing Education Department, Imed Group.

Amanda Pascoal Valle Felicio

Physician with training in Clinical Medicine, Intensive Medicine and Palliative Care; Intensive care physician by AMIB (Brazilian Intensive Care Medicine Association) with area of expertise in Palliative Medicine by AMB (Brazilian Medical Association); Coordinator of the adult Intensive Care Unit at *Hospital Municipal Vila Santa Catarina Dr. Gilson de Cássia Marques de Carvalho, Hospital Israelita Albert Einstein*; Experience in Palliative Care (outpatient and hospital); MBA in Health Management from *Fundação Getúlio Vargas*.

Ana Claudia Ferraz

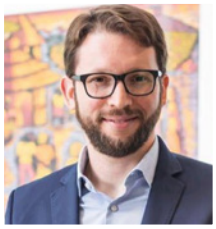
Neurologist and Intensive care physician; Responsible for the Improvement Support Group of the Adult Intensive Care Unit at *Hospital Israelita Albert Einstein.*

Ana Lucia Martins da Silva

Psychologist graduated from the *Universidade Metodista de São Paulo*. Specialization in Hospital Psychology by the Pieron Institute of Applied Psychology and Improvement by the SOCESP (Society of Cardiology of the State of São Paulo). She holds an MBA in Leadership, Team Management and Productivity from *Pontifícia Universidade Católica do Rio Grande do Sul*. She is currently coordinator and technical manager of the Psychology Service at *Hospital Israelita Albert Einstein*.

André Mario Doi

Clinical Pathologist graduated in 2005 from the *Faculdade de Medicina, Pontifícia Universidade Católica de Sorocaba* and medical residency completed in 2009 from the *Universidade Federal de São Paulo*. Doctoral thesis defended on 02/20/2018 by the Discipline of Translational Medicine at the *Universidade Federal de São Paulo*. Acting in the area of Laboratory Medicine as a medical advisor at the Clinical Laboratory of the *Hospital Israelita Albert Einstein*, Professor at the Faculdade Israelita de Ciências da Saúde Albert Einstein, *Hospital Israelita Albert Einstein* and Member of the Brazilian Committee for Sensitivity Tests to Antimicrobials BrCAST. Currently scientific director of the Brazilian Society of Clinical Pathology/Laboratory Medicine.



Antônio Carlos Bacelar Nunes Filho

Coordinator of the Center for Support to Teaching in Cardiology (NAEC - *Núcleo de Apoio ao Ensino em Cardiologia*); Cardiologist of the Coronary Unit of the Albert Einstein Intensive Care Center; Specialist in Valvopathies and Endocarditis at the InCOR - *Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo*.

Antonio Valério da Silva Junior

Arnaldo Alves da Silva

AMIB (Brazilian Intensive Care Medicine Association) accredited intensive care physician; Neurointensivist; Former Fellow of the Hospital *Pitié Salpêtrière*, Paris, France; Cochrane Collaboration Member.

Arnaldo Lopes Colombo

He has a medical degree from the *Universidade Federal de São Paulo* (1983), medical residency in Infectology (1983-1986) at *Hospital São Paulo, Universidade Federal de São Paulo*, a Master's degree in Infectious and Parasitic Diseases from the *Universidade Federal de São Paulo* (1989), and a Ph.D. in Medicine from the University of Texas System-*Universidade Federal de São Paulo* (1994). He is currently a full professor of Infectology at the *Universidade Federal de São Paulo* and Technical Director of the Special Laboratory of Mycology.

Arthur Oswaldo de Abreu Vianna

MSc in Pulmonology, *Universidade Federal Fluminense;* Specialist in Intensive Care Medicine, AMIB (Brazilian Intensive Care Medicine Association); Intensive Care Unit Coordinator, *Clínica São Vicente, Rede D'Or São Luiz*/RJ.

Barbara Gadioli

Nurse by the *Escola de Enfermagem, Universidade de São Paulo, Ribeirão Preto* (2017); Specialist in Intensive Care by the multidisciplinary residency program of the *Hospital Israelita Albert Einstein* (2019); Senior Nurse at the Intensive Care Unit of *Hospital Israelita Albert Einstein;* Coordinator of the Advanced Care Group in Neurology of the Intensive Care Unit of the *Hospital Israelita Albert Einstein*; Member of the ECMO team at *Hospital Israelita Albert Einstein*.

Barbara Rubim Alves

Cardiologist, member of the ECMO team, of the heart transplantation and Coronary Unit of the *Hospital Israelita Albert Einstein*.

Bárbara Vieira Carneiro

Daily Intensive care physician at *Hospital Israelita Albert Einstein* Adult Intensive Care Unit; Coordinator of the neurointensive care post-graduation course at *Hospital Israelita Albert Einstein*; Assistant Physician at the Trauma Intensive Care Unit of the *Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo*.

Bento Fortunato Cardoso dos Santos

MSc and Ph.D. in Nephrology from *Escola Paulista de Medicina*, *Universidade Federal de São Paulo;* Research Fellow - Renal Division, Brigham and Women's Hospital, Harvard Medical School; Executive MBA in Health, Einstein-Insper; Medical Manager of Dialysis Center Einstein; Nephrologist of the Nephrology Support Group – GSN, *Hospital Israelita Albert Einstein.*

Bruno Caldin da Silva

Ph.D. in Sciences by the *Universidade de São Paulo;* Reference Physician at the Critical Illness Department, *Hospital Israelita Albert Einstein*.

Bruno de Arruda Bravim

Medical Coordinator of the Critical Care Department at *Hospital Israelita Albert Einstein*.

Bruno Franco Mazza

Reference Physician at the Transplant Intensive Care Unit, Critically ill Patient Department, *Hospital Israelita Albert Einstein*; Specialist in Intensive Care Medicine by AMIB (Brazilian Intensive Care Medicine Association); Executive MBA in Health Management by *Faculdade Getúlio Vargas*; Master in Intensive Care Medicine by *Universidade Federal de São Paulo.*

Carla Luciana Batista

Physiotherapist Specialist in Cardiorespiratory Physiotherapy by InCOR - *Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo*. Doctoral student at the Discipline of Pulmonology at *Faculdade de Medicina, Universidade de São Paulo*. She is currently a Reference Physiotherapist at the Adult Intensive Care Unit of *Hospital Israelita Albert Einstein* and Professor of Postgraduate Courses at *Hospital Israelita Albert Einstein*.

Carmen Silvia Valente Barbas

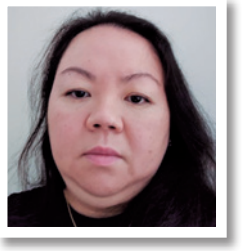
Full Professor in Pulmonology at the *Faculdade de Medicina, Universidade de São Paulo*; Pneumologist and intensivist at *Hospital Israelita Albert Einstein*; President of the Paulista Intensive Care Society, 2020-2021.

Carolina Cáfaro

Physician from the *Centro Universitário Barão de Mauá;* Residency in Internal Medicine by the *Santa Casa de Misericórdia de Ribeirão Preto*; Residency in Intensive Care at *Hospital Israelita Albert Einstein*; Observership at Amsterdam University Medical Center; Preceptor at the Intensive Care Medicine Residency Program at *Hospital Israelita Albert Einstein.*

Carolina de Moraes Pellegrino

Doctor graduated in 2013 from the Faculty of Medicine, *Universidade de Santo Amaro*, Intensivist by the AMIB (Brazilian Intensive Care Medicine Association) intensive care specialization program. Title of Specialist in Intensive Care Medicine by AMIB/AMB (Brazilian Medical Association) 2018. Coordinated the League of Intensive Medicine from 2014-2017 by the *Universidade de Santo Amaro*, Trauma and Emergency Ultrasound Instructor (USET) by the Pan-American Trauma Society, participated in the Observationship program by Pan-American Injury at the Critical Trauma Unit at Virginia Commonwealth University in Richmond, Virginia - USA. Presented the work Epidemiology of 184 patients with ventilator-associated pneumonia at the 2014 Brazilian Congress of Intensive Care.



Carolina Keiko Yamamoto Honda

Adult Intensive Care Unit Intensive care physician on-duty, *Hospital Israelita Albert Einstein*. Daily Intensivist at the Tele-ICU Service, *Hospital Israelita Albert Einstein*.

Cassiano Teixeira

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Physician of the Critically ill Patient Department and of the Multidisciplinary Nutritional Therapy Team.

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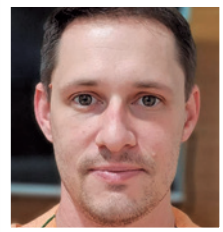

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Specialist in Respiratory Physiotherapy by *Universidade Federal de São Paulo;* Specialist in exercise physiology by *Universidade Federal de São Paulo*; Master in Rehabilitation Sciences by the *Universidade Nove de Julho*; Reference Physiotherapist of the Critically ill patients department at *Hospital Israelita Albert Einstein;* Professor of post-graduate courses at *Hospital Israelita Albert Einstein*.

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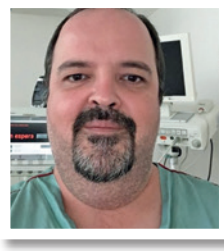
Eva Carolina Andrade Rocha

Professor of Neurology at the *Universidade Federal de São Paulo*; Ph.D. in Neurosciences from *Universidade Federal de São Paulo*; Title of specialist in Transcranial Doppler by the Brazilian Academy of Neurology; Research Fellowship at Massachusetts General Hospital/Harvard Medical School; Neurologist at the *Hospital Israelita Albert Einstein* Clinical Staff.



Evandro José de Almeida Figueiredo

Intensive care physician, day laborer at the adult Intensive Care Unit at *Hospital Israelita Albert Einstein*.

Fabio Tanzillo Moreira

Degree in Medicine, *Faculdade de Ciências Médicas de Santos* (2008-2013); Residency in Clinical Medicine, *Hospital Ipiranga* (2014-2016); Intensive Care Medicine Residency, *Hospital Israelita Albert Einstein* (2016-2018) and Physician of the Critical Care Department, *Hospital Israelita Albert Einstein* (2018-to date); Preceptor of the Intensive Care Medicine residency at *Hospital Israelita Albert Einstein* (2018-2020); Professor of the *Hospital Israelita Albert Einstein* postgraduate intensive care medicine residency (2019-current); Post-graduate degree in Quality Management in Healthcare (2019-2020).

Fabrício Rodrigues Torres de Carvalho

Attending physician at the *Hospital Israelita Albert Einstein* CTI-A; Infectious Disease Specialist at *Hospital Israelita Albert Einstein* Institutional Back Office; Day Doctor at the A.C.Camargo Cancer Center, Intensive Care Unit; Ph.D. in Medicine from the *Faculdade de Medicina, Universidade de São Paulo*.

Farah Christina de la Cruz Scarin

Intensivist Physician Technical Reference Intensive Care Unit, *Hospital Israelita Albert Einstein*.

Felipe Souza Lima Vianna

He has a medical degree from the *Universidade do Estado do Rio de Janeiro*, a residency in Neurology from the *Universidade Federal Fluminense*, and a residency in Intensive Care Medicine from the *Hospital Israelita Albert Einstein*.

Fernando Bacal

Vice President of the *Sociedade Beneficente Israelita Brasileira Albert Einstein* and Coordinator of the Heart Failure and Transplantation Program.

Fernando Souza Nani

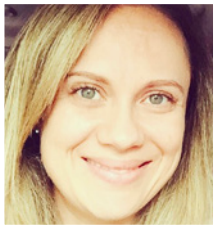
Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo Obstetric Anesthesia Supervisor; Coordinator of the Obstetric Anesthesia Center of the SAESP (Paulista Society of Anesthesia) and Anesthesiologist of the Maternal and Child Anesthesia Group.

Filipe Utuari de Andrade Coelho

Ph.D. and Master in Health Sciences from the *Escola de Enfermagem*, *Universidade de São Paulo*. Certified in Intensive Care Nursing by the ABENTI. Training in Extracorporeal Oxygenation Membrane (ECMO) by Stollery Childrens Hospital and InCOR - *Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo*. Specialist in Intensive Care Nursing by the *Instituto Israelita de Ensino e Pesquisa Albert Einstein, Hospital Israelita Albert Einstein*. He is currently Assistant Professor of the Undergraduate Nursing Program at *Faculdade Israelita de Ciências da Saúde Albert Einstein, Hospital Israelita Albert Einstein* and Coordinator of the Post-Graduate Intensive Care Nursing Program at the *Instituto Israelita de Ensino e Pesquisa Albert Einstein, Hospital Israelita Albert Einstein*. He has experience in Nursing, with emphasis in Intensive Care, working mainly on the following topics: ECMO and point of care ultrasound.

Flávia Julie do Amaral Pfeilsticker

Intensive care physician, member of the Adult Intensive Care Unit and Multidisciplinary Nutritional Therapy Team at *Hospital Israelita Albert Einstein*; Master in Health Sciences from *Hospital Israelita Albert Einstein*; Specialist in Intensive Care Medicine by AMIB (Brazilian Intensive Care Medicine Association); Specialist in Enteral and Parenteral Nutrition by BRASPEN (Brazilian Society of Parenteral and Enteral Nutrition).



Flávia Nunes Dias Campos

Physician from P*ontifícia Universidade Católica de São Paulo*; Intensivist from *Hospital Israelita Albert Einstein*/AMIB (Brazilian Intensive Care Medicine Association); Master's degree in Health Sciences from *Faculdade Israelita de Ciências da Saúde Albert Einstein, Hospital Israelita Albert Einstein*; Medical preceptor at *Faculdade Israelita de Ciências da Saúde Albert Einstein*, *Hospital Israelita Albert Einstein* and professor of the *Latu Sensu* postgraduate course in Intensive Care at *Hospital Israelita Albert Einstein*.

Frederico Polito Lomar

Daily attending physician at the Adult Intensive Care Center of the *Hospital Israelita Albert Einstein*.

Gisele Sampaio Silva

Associate Professor of the Discipline of Clinical Neurology, *Escola Paulista de Medicina, Universidade Federal de São Paulo*; Clinical Trialist; Associate Professor of the Discipline of Clinical Neurology; Clinical Trialist/Neurology *Hospital Israelita Albert Einstein*.

Glasiele Cristina Alcala

Ph.D., completed her doctorate in Pulmonology at the *Universidade de São Paulo*, focusing mainly on mechanical ventilation, lung mechanics, electrical impedance tomography, and esophageal pressure. She is currently a postdoctoral fellow at Massachusetts General Hospital, affiliated with Harvard Medical School.

Guilherme Martins de Souza

Specialist title in Intensive Care Medicine by the AMIB (Brazilian Intensive Care Medicine Association), 2020; Medical Reference in the Intensive Care Unit at *Hospital Municipal Vila Santa Catarina Dr. Gilson de Cássia Marques de Carvalho, Hospital Israelita Albert Einstein*.

Gustavo Faissol Janot de Matos

Intensive care physician at the Intensive Care Unit of *Hospital Israelita Albert Einstein*; Ph.D. in Pulmonology, Hospital *das Clínicas, Faculdade de Medicina, Universidade de São Paulo*; Fellow of the Institute for Healthcare Improvement.

Hélio Penna Guimarães

Emergency and Intensive Care Physician; Ph.D. in Sciences from the *Universidade de São Paulo*; Daily physician at the Intensive Care Unit of *Hospital Israelita Albert Einstein*; Associate professor of *Escola Paulista de Medicina, Universidade Federal de São Paulo;* President of ABRAMEDE (Brazilian Association of Emergency Medicine)/President of FLAME (Latin American Federation of Emergency Medicine).

Ilusca Cardoso de Paula

Intensive Care Physician and Nutrologist at *Hospital Israelita Albert Einstein*.

João Manoel da Silva Junior

MD, Ph.D. in medical sciences; Director of the Anesthesiology Service of *Hospital do Servidor Público Estadual*; Intensive Care Physician at *Hospital Israelita Albert Einstein* and at the anesthesiology division of *Instituto Central, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo.*

José Eduardo Afonso Júnior

He has a medical degree from the *Universidade de São Paulo* (2000) and a doctorate in Pulmonology from the *Universidade de São Paulo* (2010). He is currently a member - American Respiratory Society, Brazilian and Paulista Societies of Pulmonology and Phthisiology, European Respiratory Society, Brazilian Association of Organ Transplantation and International Society for Heart and Lung Transplantation. Medical Coordinator of the Transplant Program at *Hospital Israelita Albert Einstein*.

Karina Tavares Timenetsky

Reference Physiotherapist of the Department of Critically ill Patients at *Hospital Israelita Albert Einstein*; Professor of the Graduate Program and of the Professional Master's Degree in Nursing and of the Teaching Program at *Faculdade Israelita de Ciências da Saúde Albert Einstein, Hospital Israelita Albert Einstein*; Manager of Physiotherapy Higher Education at *Faculdade Israelita de Ciências da Saúde Albert Einstein, Hospital Israelita Albert Einstein*.

Laerte Pastore

Medical Manager of Critical Units at *Hospital Sírio-Libanês*.

Lara Patricia Kretzer

Coordinator of Palliative Medicine Residency, *Hospital Universitário, Universidade Federal de Santa Catarina;* Coordinator of the Palliative Care Team and Pain Clinic, *Hospital Universitário, Universidade Federal de Santa Catarina;* Intensive care physician at *Hospital Nereu Ramos, Florianópolis*/SC; Ph.D. in Law from the University of London.

Leonardo José Rolim Ferraz

Manager of the Critically ill Patients Department at *Hospital Israelita Albert Einstein*. An intensivist physician, he did his academic training at the *Universidade Federal da Bahia* and at the *Universidade de São Paulo* with interest in high complexity and liver transplantation. He has an MBA in Health Management from Insper, having done Fellowship at Harvard T.H. Chan School of Public Health and Fellowship at the Institute for Health Care Improvement with focus on quality, safety, and science of improvement, obtaining the certification of Improvement Advisor.

Leonardo Lima Rocha

Specialist in Intensive Care and Ph.D. in Sciences by *Hospital Israelita Albert Einstein*; Medical Coordinator of the Intensive Care Unit at *Hospital Alemão Oswaldo Cruz*.

Lianna Ferreira Bringel Cavalieri

Intensive Care Unit technical reference physician at *Hospital Municipal Vila Santa Catarina Dr. Gilson de Cássia Marques de Carvalho, Hospital Israelita Albert Einstein*; Cardiologist, certified by the SBC (Brazilian Society of Cardiology); Intensivist by AMIB (Brazilian Intensive Care Medicine Association).

Lilian Moreira Pinto

Intensive care physician, accredited by AMIB (Brazilian Intensive Care Medicine Association), on duty at the Intensive Care Unit of *Hospital Israelita Albert Einstein;* Nutrologist, post graduated by ABRAN (Brazilian Association of Nutrology) and certified by BRASPEN (Brazilian Society of Parenteral and Enteral Nutrition).

Lucila Nassif Kerbauy

Hematologist, bone marrow transplanter, and researcher at *Hospital Israelita Albert Einstein*. She has a doctorate from the Biotechnology Institute at the *Universidade de São Paulo*. Research fellow at the bone marrow transplantation and cell therapy department at MD Anderson Cancer Center (2016-2019).

Luiz Marcelo Sá Malbouisson

Graduated in Medicine from the *Escola Bahiana de Medicina e Saúde Pública* (1994), he attended medical residency in Anesthesiology at the *Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (1997) and specialization in Intensive Care Medicine at the InCOR - *Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (1998), is a specialist in Anesthesiology and Intensive Care Medicine. Research Fellow at the Pitié-Salpétrière Hospital of the Paris VI University (1998-2000), he obtained a doctorate in science from the *Universidade de São Paulo* in 2003 and Free Teaching from the *Universidade de São Paulo* in 2013. He is currently the coordinator of the Surgical Intensive Care Unit of the Division of Anesthesiology, of the Surgical Emergency Intensive Care Unit of the Division of Clinical Surgery III and of the Intensive Care Unit of the Department of Gastroenterology of the *Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* and is advisor of the *strictu-sensu* postgraduate program in Anesthesiology from *Faculdade de Medicina, Universidade de São Paulo*.

Maramelia Araujo de Miranda Alves

Clinical neurologist in private practice; and as a neurologist/neurohospitalist in the clinical staff of the *Rede D'Or São Luiz/Morumbi* and *Hospital Israelita Albert Einstein*; is a Neurosonologist at F*leury Medicina Diagnóstica, Rede D'Or São Luiz/Morumbi* and *Hospital Beneficência Portuguesa*, in São Paulo. She is an affiliated Neurologist of the Vascular Neurology Sector of the Discipline of Neurology at *Escola Paulista de Medicina, Universidade Federal de São Paulo*, acting directly in patient care, research and teaching in that sector, at *Hospital São Paulo, Universidade Federal de São Paulo*. She is current Coordinator of the Scientific Directory of Cerebrovascular Diseases, Neurointensivism and Interventional Neuroradiology of the Brazilian Academy of Neurology, as well as current President of the Brazilian Society of AVC (biennium 2022-24).

Marçal Paiva Jr.

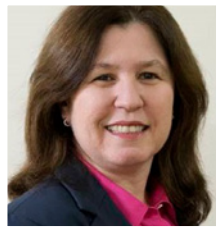
Master in Tropical Medicine from *Universidade Federal de Pernambuco*, Intensivist from AMIB (Brazilian Intensive Care Medicine Association), Professor of the Medical Course at *Centro Universitário Maurício de Nassau*, Medical Coordinator of the Intensive Care Unit at *Rede D'Or São Luiz/Recife*.

Marcele Liliane Pesavento

Executive MBA in administration in the management of clinics, hospitals and health industries by *Fundação Getúlio Vargas*; Specialist in Extracorporeal Oxygen Membrane (ECMO) by Stollery Children's Hospital and the InCOR - *Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (2015); Post-graduation modality residency in the intensive care unit nursing by the *Universidade Federal de São Paulo*; Graduation in Nursing from the *Universidade Estadual Paulista Júlio de Mesquita Filho*; Nursing coordinator of the adult Intensive Care Unit at *Hospital Israelita Albert Einstein*.

Marcelo de Oliveira Maia

AMIB (Brazilian Intensive Care Medicine Association) Executive Board President 2022-23; Medical Coordinator of the Intensive Care Unit at *Hospital Anchieta, Rede KORA, Distrito Federal*/DF; Regional Coordinator of the Post-Graduation in Intensive Care Medicine of AMIB (Brazilian Intensive Care Medicine Association) in the *Distrito Federal*/DF; Master in Health Sciences, *Escola Superior de Ciências da Saúde, Distrito Federal*/DF.



Márcia Jacomelli

Medical Coordinator of the Respiratory Endoscopy Center at *Hospital Israelita Albert Einstein* since 2013. Medical Supervisor of the Respiratory Endoscopy Service of InCOR - *Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* since 2009. Ph.D. in Sciences by *Faculdade de Medicina, Universidade de São Paulo* (2007). Member of the Title Commission of the Brazilian Society of Pneumology and Phthisiology since 2012. Deputy coordinator of the Department of Respiratory Endoscopy of the Brazilian Society of Pulmonology and Phthisiology. Pulmonologist from *Faculdade de Medicina, Universidade de São Paulo* (1998). Graduated in Medicine from the *Universidade Federal do Espírito Santo* (1994).

Marcos Borges Amorim

Ph.D. candidate, Pulmonology Program, *Universidade de São Paulo*.

Marcos Soares Tavares

Specialized Continuation Program in Respiratory Failure and Mechanical Ventilation, *Universidade de São Paulo.*

Marcos Vinicius Tadao Fujino

Neurologist, Technical Reference of the Department of Critical Care Patients, *Hospital Israelita Albert Einstein*. Neurologist with a postgraduate degree in Neurointensivism from *Escola Paulista de Medicina, Universidade Federal de São Paulo*.

Mariangela Pimentel Pincelli

Graduated with a master's and doctorate from the *Faculdade de Medicina, Universidade de São Paulo*; Pulmonologist by SBPT (*Sociedade Brasileira de Pneumologia e Tisiologia*) and Intensivist by AMIB (Brazilian Intensive Care Medicine Association); Professor at *Universidade Federal de Santa Catarina*.

Mauro Roberto Tucci

Physician of the Respiratory Intensive Care Unit of the Heart Institute. Ph.D. in Medicine (area of pulmonology) from the *Faculdade de Medicina, Universidade de São Paulo.*

Mayara Laise Assis

Intensive care physician graduated from *Hospital Israelita Albert Einstein* (2019-2021) and Specialist in Quality Management from *Instituto Israelita de Ensino e Pesquisa Albert Einstein, Hospital Israelita Albert Einstein* (2022-2023). Currently a Physician at the Adult Intensive Care Unit of *Hospital Israelita Albert Einstein* (2021-to date).

Melina Gouveia Castro

Nutrologist from the *Faculdade de Medicina, Universidade de São Paulo*; Ph.D. from *Faculdade de Medicina, Universidade de São Paulo*; MD of the Multiprofessional Nutrition Therapy Team (EMTN) of *Hospital Israelita Albert Einstein* and President of the BRASPEN (Brazilian Society of Parenteral and Enteral Nutrition), 2020-2021.

Moacyr Silva Junior

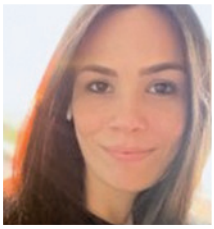
Infectious Diseases Physician, Infection Service and Intensive Care Unit, *Hospital Israelita Albert Einstein*; Assistant Physician at the *Universidade Federal de São Paulo.*

Murillo Santucci César de Assunção

Intensivist Physician at the Adult Intensive Care Center at *Hospital Israelita Albert Einstein*; Master in Health Sciences by *Universidade Federal de São Paulo*; Ph.D. in Translational Medicine from *Universidade Federal de São Paulo*; Title of Specialist in Intensive Care Medicine by AMIB (Brazilian Intensive Care Medicine Association).

Niklas Söderberg Campos

Intensive care physician at the adult Intensive Care Unit of *Hospital Israelita Albert Einstein*; Ph.D. from the *Faculdade de Medicina, Universidade de São Paulo*; Coordinator of the adult Intensive Care Unit at *Hospital Municipal Dr. Moysés Deutsch (M'Boi Mirim), Hospital Israelita Albert Einstein*.

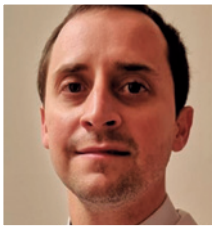


Paula Rodrigues Sanches

Intensivist by AMIB (Brazilian Intensive Care Medicine Association); Postgraduate in neurosciences by *Instituto Israelita de Ensino e Pesquisa Albert Einstein, Hospital Israelita Albert Einstein*; Clinical Research Fellow at Massachusetts General Hospital, Boston; Reference Physician of the Department of Critical Patients, *Hospital Israelita Albert Einstein*; Coordinator of the Graduate Program in Neurointensivism at *Hospital Israelita Albert Einstein*.

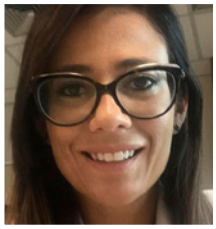
Paula Tuma

Einstein Continuous Improvement Specialist and Institute for Healthcare Improvement.



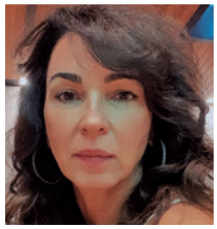
Pedro Paulo Zanella do Amaral Campos

Specialist in ECMO and Intensive care physician at *Hospital Israelita Albert Einstein*; Specialist and certified in adult ECMO by ELSO (Extracorporeal Life Support Organization); Specialist in Intensive Care by AMIB (Brazilian Intensive Care Medicine Association); Fellow in experimental research by the Inselspital, University Hospital of Bern, Switzerland.



Polyana Vulcano de Toledo Piza

MD, neurologist, Department of Critical Care Patients, *Hospital Israelita Albert Einstein*; Ph.D. from *Faculdade Israelita de Ciências da Saúde Albert Einstein, Hospital Israelita Albert Einstein*; Felowship neurosciences laboratory Spaulding Rehabilitation Hospital, Harvard Medical School.



Raquel Afonso Caserta Eid

Physiotherapy Coordinator for the Critical Care Department, *Hospital Israelita Albert Einstein*.

Regis Goulart Rosa

Intensive care physician by AMIB (Brazilian Intensive Care Medicine Association). MSc and Ph.D. from *Universidade Federal do Rio Grande do Sul*. Post-doctorate by *Universidade Federal de Ciências da Saúde de Porto Alegre*. Researcher at *Hospital Moinhos de Vento*. Member of the executive committee of BRICNet and ILAS.

Ricardo Kenji Nawa

Graduated in Physiotherapy from the *Faculdade de Medicina, Universidade de São Paulo, Ribeirão Preto*. Master and Doctor in Sciences by the *Faculdade de Medicina, Universidade de São Paulo, Ribeirão Preto*. Physiotherapist of the Critical Care Department of *Hospital Israelita Albert Einstein*.

Ricardo Luiz Cordioli

Physician on-duty and researcher of the Adult Intensive Care Unit Team at *Hospital Israelita Albert Einstein*; Coordinator of the Adult Intensive Care Post-Graduation Course at *Hospital Israelita Albert Einstein*; Post-Doctorate by the Geneva University Hospital.

Roberta Fittipaldi Palazzo

Pulmonologist at the *Hospital Israelita Albert Einstein*. Physician at the respiratory Intensive Care Unit, Heart Institute. Post-graduate Intensive Care Professor at *Hospital Israelita Albert Einstein* and Ph.D. in Sciences from the *Faculdade de Medicina, Universidade de São Paulo.*

Roberto Camargo Narciso

Roberto Rabello Filho

Medical Tecnical Reference Intensive Therapy *Hospital Israelita Albert Einstein*; Doctorate in Health Sciences by the *Faculdade Israelita de Ciências da Saúde Albert Einstein, Hospital Israelita Albert Einstein*. Title of specialist Intensive Care by AMIB (Brazilian Intensive Care Medicine Association).

Rodrigo Bastos Duarte Passos

Physician at the Imaging Department at *Hospital Israelita Albert Einstein*.

Rogerio da Hora Passos

Specialist in Intensive Care Medicine; Specialist in Nephrology; Fellowship, Institute for Healthcare Improvement.

Roseny dos Reis Rodrigues

Anesthesiologist and intensive care physician; Coordinator of the Intensive Care Unit of the Anesthesia Emergency Room of the *Instituto Central, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo;* Intensive care physician of the Critical Patient Department of the *Hospital Israelita Albert Einstein*; Ph.D. and post-doctorate from the *Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo.*

Sérgio Nogueira Nemer

Physiotherapist, Ph.D. in Pneumology from the *Universidade de São Paulo*; Specialist in Neurophysiology, Respiratory and Neurological Physiotherapy; Professor of Postgraduate courses at *Interfisio* and *Rede D'Or São Luiz*; International Training in Proprioceptive Neuromuscular Facilitation, Bobtah, Maitland, Mulligan, Osteopathy and Neurodynamics.

Sidney Klajner

Surgeon of the Digestive Tract. Graduated in Medicine and Master's Degree from the *Faculdade de Medicina, Universidade de São Paulo*, medical residency at the *Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo*, fellow of the American College of Surgeons. President of the *Sociedade Beneficente Israelita Brasileira Albert Einstein*. He is a member of the Administrative Council of the Health Coalition Institute and the Superior Council of Health Management - under the administration of the State Secretary of Health of São Paulo, as well as Professor of the Executive MBA in Health Management at Einstein, in the subject - The Health Market in Brazil and the World: Structure and Strategies.

Tais Rodrigues de Lara

Intensive Care Physician.

Taíssa Ferrari Marinho

Neurologist Specialist in Epilepsy; Clinical Neurophysiologist at *Hospital Israelita Albert Einstein*; Master in Neurosciences by *Universidade Federal de São Paulo*; Ph.D. in Health Sciences from F*aculdade Israelita de Ciências da Saúde Albert Einstein, Hospital Israelita Albert Einstein*; Postdoc at McGill University, Montreal Neurological Institute.

Tatiana Mohovic

Coordinator of the Cardiac Surgery Intensive Care Unit at *Hospital São Paulo, Universidade Federal de São Paulo*.

Telma Antunes

Pulmonologist of the Clinical Staff of the *Hospital Israelita Albert Einstein*; Ph.D. in Pulmonology from the *Faculdade de Medicina, Universidade de São Paulo.*

Thais Dias Midega

Intensivist physician at the adult Intensive Care Unit of *Hospital Israelita Albert Einstein*; Specialist in Intensive Care Medicine by AMIB (Brazilian Intensive Care Medicine Association); Ph.D. candidate in Health Sciences at *Faculdade Israelita de Ciências da Saúde Albert Einstein, Hospital Israelita Albert Einstein.*

Thiago Domingos Corrêa

Medical Manager of the Critical Care Department at *Hospital Israelita Albert Einstein*; Permanent Professor of the Post-Graduation *Stricto Sensu* Program in Health Sciences at *Hospital Israelita Albert Einstein* and Member of the Scientific Committee of the BRICNet.

Uri Adrian Prync Flato

Vinicius Barbosa Galindo

Degree in Medicine from the *Universidade Federal do Alagoas* (2016); Residency in Internal Medicine at *Conjunto Hospitalar do Mandaqui* (2019) and in Intensive Care at *Hospital Israelita Albert Einstein* (2021); Intensivist at CTIA at *Hospital Israelita Albert Einstein* and Master's student at the *Stricto Sensu* Graduate Program in Health Sciences at *Faculdade Israelita de Ciências da Saúde Albert Einstein, Hospital Israelita Albert Einstein*.

Walace de Souza Pimentel

Hospital Israelita Albert Einstein Intensive Care Center.

CONTENTS

Scientific Program

III Einstein International Symposium on Intensive Care				
August 16-18, 2023				
Venue: Moise Safra Auditorium				
August 16, 2023 | Wednesday				
Start time	**Finish time**	**Activity**	**Moderator/Speaker**	**Institution**
08:00	09:00	Opening Session	Sidney Klajner	Hospital Israelita Albert Einstein
			Leonardo José Rolim Ferraz	Hospital Israelita Albert Einstein
			Elias Knobel	Hospital Israelita Albert Einstein
			Carmen Silvia Valente Barbas	Hospital Israelita Albert Einstein
			Bruno Franco Mazza	Hospital Israelita Albert Einstein
			Thiago Domingos Corrêa	Hospital Israelita Albert Einstein
			Eliézer Silva	Hospital Israelita Albert Einstein
09:00	10:00	A 30-year Retrospective of Mechanical Ventilation at Hospital Israelita Albert Einstein and Intensive Care Medicine in Brazil	Elias Knobel	Hospital Israelita Albert Einstein
			Eliézer Silva	Hospital Israelita Albert Einstein
09:00	09:30	A 30-year Retrospective of Mechanical Ventilation at Hospital Israelita Albert Einstein	Carmen Silvia Valente Barbas	Hospital Israelita Albert Einstein
09:30	10:00	A 30-year Retrospective of Intensive Care Medicine in Brazil	Marcelo de Oliveira Maia	AMIB (Brazilian Intensive Care Medicine Association) Rede D'Or São Luiz/DF
10:00	10:30	Coffee Break Separate Auditoriums		
10:30	12:30	Keynote Lecture: Critically ill Patients	Leonardo José Rolim Ferraz	Hospital Israelita Albert Einstein
			Thiago Domingos Corrêa	Hospital Israelita Albert Einstein
10:30	11:00	ICU as a High Trust Organizations, Fact or Fiction?	Antonio Capone Neto	Institute for Healthcare Improvement
11:00	11:30	Prognosis after Cardiac Arrest: What's New?	Gisele Sampaio Silva	Hospital Israelita Albert Einstein
11:30	12:00	What's New in Treating Fungal Infections in the ICU?	Arnaldo Lopes Colombo	Universidade Federal de São Paulo
12:00	12:30	The intensivist in the digital age: the importance of clinical training	Elias Knobel	Hospital Israelita Albert Einstein
12:30	13:30	MSD Satellite Symposium - Fighting Hard-to-Treat Bacteria: How to defeat P. Aeruginosa and ESBL	Marçal Paiva Jr.	Rede D'Or São Luiz/Recife
13:30	15:30	Cardiac Intensive Care	Antônio Carlos Bacelar Nunes Filho	Hospital Israelita Albert Einstein
			Walace de Souza Pimentel	Hospital Israelita Albert Einstein
13:30	13:50	Adrenergic Cardiomyopathy in the ICU	Elias Knobel	Hospital Israelita Albert Einstein
13:50	14:10	Treatment of Pulmonary Embolism - State of the art	Gustavo Faissol Janot de Matos	Hospital Israelita Albert Einstein
14:10	14:30	Updates in the Treatment of Acute Heart Failure in Intensive Care	Fernando Bacal	Sociedade Beneficente Israelita Brasileira Albert Einstein
14:30	14:50	Controversies Involving Mechanical Circulatory Assist in the Management of Cardiogenic Shock	Barbara Rubim Alves	Hospital Israelita Albert Einstein
14:50	15:10	Atrial Fibrillation in the ICU - from Guidelines to Bedside Practice	Hélio Penna Guimarães	Hospital Israelita Albert Einstein
15:10	15:30	Discussion		
15:30	16:00	"Coffee Break Moise Safra Auditorium"		
16:00	18:00	Surgery | Nutrition	Ilusca Cardoso de Paula	Hospital Israelita Albert Einstein
			Evandro José de Almeida Figueiredo	Hospital Israelita Albert Einstein

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...Continuation

August 16, 2023 | Wednesday				
Start time	**Finish time**	**Activity**	**Moderator/Speaker**	**Institution**
16:00	16:20	Precision Nutrology in the ICU: Indirect Calorimetry, USG and Bioimpedance	Melina Gouveia Castro	Hospital Israelita Albert Einstein
16:20	16:40	Rehabilitation in Intensive Care and Impact on Lean Mass Gain	Flávia Julie do Amaral Pfeilsticker	Hospital Israelita Albert Einstein
16:40	17:00	Protein Intake in Critically ill Patients: Is Less More?	Lilian Moreira Pinto	Hospital Israelita Albert Einstein
17:00	17:20	Use of Artificial Intelligence in Gastrointestinal Tract Dysfunction	Diogo Oliveira Toledo	Hospital Israelita Albert Einstein
17:20	17:40	Perioperative Hemodynamic Optimization, How to Maximize the Outcome?	João Manoel da Silva Junior	Hospital Israelita Albert Einstein
17:40	18:00	Discussion		
18:00	19:00	FREE TOPICS - ABSTRACTS PRESENTATION	Arnaldo Alves da Silva	Hospital Israelita Albert Einstein
			Ricardo Kenji Nawa	Hospital Israelita Albert Einstein
			Carolina Cáfaro	Hospital Israelita Albert Einstein
18:00	18:07	4DMB - Understanding the interaction between respiratory muscle effort and assisted proportional ventilation plus in a mechanical simulator	Isabela Naiara Evangelista Matilde	
18:10	18:17	4DMM - Evaluation of the thigh sonographic index in patients with copd in a public hospital in Mato Grosso: a cross-sectional study	Elizeu Alves Barros	
18:20	18:27	4DMN - Acute Post-COVID-19 Syndrome and its functional and radiological repercussions: a scope review	Lucas Sabbagh Loures Vieira	
18:30	18:37	4DMR - The use of non-invasive mechanical ventilation in patients with COVID-19: an integrative review	Lisiane Krolikovski da Silva	
18:40	18:47	4DMS - Respiratory effort during pressure support variation in COVID-19 patients	Marcos Borges Amorim	
18:50	18:57	4DMV - Epidemiological profile of injured children with acute respiratory insufficiency in a public hospital	Bárbara Carvalho dos Santos	
19:00		Closing		

August 17, 2023 | Thursday				
Start time	**Finish time**	**Activity**	**Moderator/Speaker**	**Institution**
08:00	10:00	Humanization, palliative and post-ICU care	Erika Satomi	Hospital Israelita Albert Einstein
			Marcele Liliane Pesavento	Hospital Israelita Albert Einstein
08:00	08:20	Triad in the Modern ICU: Mild Sedation, Early Mobilization and Family Engagement	Regis Goulart Rosa	Hospital Moinhos de Vento
08:20	08:40	Communication and Conflict Management: The Day-to-Day Life of an Intensive Care Physician	Ana Lucia Martins da Silva	Hospital Israelita Albert Einstein
08:40	09:00	End-of-Life Patient Care Skills	Lara Patricia Kretzer	Hospital Universitário, Universidade Federal de Santa Catarina
09:00	09:20	Post-Intensive Care Syndrome: What Do We Know and How Can We Act?	Cassiano Teixeira	Universidade Federal de Ciências da Saúde de Porto Alegre
09:20	09:40	How to avoid excessive care?	Farah Christina de la Cruz Scarin	Hospital Israelita Albert Einstein
09:40	10:00	Discussion		
10:00	11:00	Pfizer Satellite Symposium - Challenges in the management of MDR gram negative bacteria in bloodstream infections in the ICU environment	Luiz Marcelo Sá Malbouisson	Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo
11:00	11:30	Break		
11:30	12:30	Conference: Critically ill Patients	Adriano José Pereira	Hospital Israelita Albert Einstein
			Flávia Nunes Dias Campos	Hospital Israelita Albert Einstein
11:30	12:00	Heart Failure with Preserved Ejection Fraction, A New Concept for Intensivists	Daniel De Backer	CHIREC Hospitals, Bélgica
12:00	12:30	Treatment of Gram-positive Sepsis in the ICU - State of the art	Moacyr Silva Junior	Hospital Israelita Albert Einstein
12:30	13:30	Astrazeneca Satellite Symposium - Current Challenges in the Management of Severe Bleeding in Anticoagulated Patients: Insights from the Intensivist, Neurologist and Hematologist	Niklas Söderberg Campos Maramelia Araujo de Miranda Alves João Carlos de Campos Guerra	Hospital Israelita Albert Einstein Hospital Israelita Albert Einstein Hospital Israelita Albert Einstein
13:30	15:30	Management, Quality and Safety | Tele - ICU	Laerte Pastore	Hospital Sírio-Libanês
			Ana Claudia Ferraz	Hospital Israelita Albert Einstein
13:30	13:50	How Do High Performance Multidisciplinary Teams Add Value in the ICU?	Thiago Domingos Corrêa	Hospital Israelita Albert Einstein
13:50	14:10	Use of Real-Time Data and Interventions and their Impact on Efficiency and Patient Safety	Claudia Regina Laselva	Hospital Israelita Albert Einstein
14:10	14:30	Remote Management in the ICU, Fact or Fiction?	Daiane Emanuelli Seger	Hospital Israelita Albert Einstein
14:30	14:50	How to Manage Resources with Excellence in the Brazilian Unified Health System?	Leonardo José Rolim Ferraz	Hospital Israelita Albert Einstein
14:50	15:10	Zero Harm in Critically ill Patients, How Far Are We?	Antonio Capone Neto	Institute for Healthcare Improvement
15:10	15:30	Discussion		
15:30	16:00	"Coffee Break Moise Safra Auditorium"		
16:00	18:00	Sepsis | Infection and Antibiotic Therapy	Paula Tuma	Hospital Israelita Albert Einstein
			Décio Diament	Hospital Israelita Albert Einstein
16:00	16:20	How to Perform Volume Resuscitation in Sepsis Today?	Murillo Santucci César de Assunção	Hospital Israelita Albert Einstein
16:20	16:40	Antibiotic Administration within the First Hour of Sepsis Treatment: Is It for Everyone?	Daniel De Backer	CHIREC Hospitals, Bélgica
16:40	17:00	What Is the Best Current Strategy for the Treatment of Mechanical Ventilator-Associated Pneumonia (VAP)?	Roberto Rabello Filho	Hospital Israelita Albert Einstein

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August 17, 2023 | Thursday				
Start time	**Finish time**	**Activity**	**Moderator/Speaker**	**Institution**
17:00	17:20	How, When, and For Whom to Use Molecular Biology in Antibiotic Therapy in Critically ill Patients?	André Mario Doi	Hospital Israelita Albert Einstein
17:20	17:40	Are Biomarkers Useful When Starting, Changing, or Terminating Antibiotic Therapy in the ICU?	Fabrício Rodrigues Torres de Carvalho	Hospital Israelita Albert Einstein
17:40	18:00	Discussion		
18:00	19:00	FREE TOPICS - ABSTRACTS PRESENTATION	Arnaldo Alves da Silva	Hospital Israelita Albert Einstein
			Ricardo Kenji Nawa	Hospital Israelita Albert Einstein
			Carolina Cáfaro	Hospital Israelita Albert Einstein
18:00	18:07	4DMW - ICU Mobility Scale as a predictor of hospital mortality in critically ill patients	Rodrigo Cerqueira Borges	
18:10	18:17	4DMZ - A successful ECMO case of an asthmatic teenager	Ellen Pierre De Oliveira	
18:20	18:27	4DNC - Effects of inspiratory muscle training on weaning from mechanical ventilation and other aspects: a systematic review	Bárbara Carvalho dos Santos	
18:30	18:37	4DNS - Prognostication of lung ultrasound compared with chest tomography among patients with SARS-CoV-2 in the Intensive Care Unit	Pedro Guadix Zulian Teixeira	
18:40	18:47	4DNT - Prone position in patients with acute respiratory failure due to SARS-CoV-2	Fabio Barlem Hohmann	
19:00		Closing		

August 18, 2023 | Friday				
Start time	**Finish time**	**Activity**	**Moderator/Speaker**	**Institution**
07:00	08:00	FREE TOPICS - ABSTRACTS PRESENTATION	Barbara Gadioli	Hospital Israelita Albert Einstein
			Antonio Valério da Silva Junior	Hospital Israelita Albert Einstein
			Fábio Tanzillo Moreira	Hospital Israelita Albert Einstein
07:00	07:07	4DMG - Management of nursing knowledge in safe handling of critically ill patients on mechanical ventilation	Lucas Rodrigo Garcia de Mello	
07:10	07:17	4DNX - Quick sepsis-related organ failure assessment in identifying clinical deterioration in patients with COVID-19	Luiz Felipe Sales Mauricio	
07:20	07:27	4DNZ - Paving the way to Precision Medicine in ICU: Biobank integration with OMOP-CDM. Challenges, opportunities, and insights from *Hospital Israelita Albert Einstein*, Brazil	Gabriel Mesquita De Souza	
07:30	07:37	4DP2 - Dilemmas and possibilities in the development of Science of Improvement projects involving the use of Artificial Intelligence in Healthcare	Uri Adrian Prync Flato	
07:40	08:00	Discussion evaluators		
08:00	10:00	Hemodynamic Monitoring	Leonardo Lima Rocha	Hospital Israelita Albert Einstein
			Frederico Polito Lomar	Hospital Israelita Albert Einstein
08:00	08:20	Individualized Hemodynamic Monitoring in The Different Types of Shock	Daniel De Backer	CHIREC Hospitals, Bélgica
08:20	08:40	How to Choose the Type of Cardiac Output Monitoring for the Surgical Patient	Murillo Santucci Cesar de Assunção	Hospital Israelita Albert Einstein
08:40	09:00	Tissue Perfusion Markers: for Whom and When?	Alejandra Del Pilar Gallardo Garrido	Hospital Israelita Albert Einstein
09:00	09:20	POCUS in Septic Patients, How Can It Help Me?	Dante Moreira Lima	Hospital Israelita Albert Einstein
09:20	09:40	Minimally Invasive Monitoring: Is There Room for It in the Critically ill Patient?	Walace de Souza Pimentel	Hospital Israelita Albert Einstein
09:40	10:00	Discussion		
10:00	11:00	Biomerieux Satellite Symposium - We need an early diagnosis of infectious syndromes! How and why?	Ricardo Luiz Cordioli	Hospital Israelita Albert Einstein
11:00	11:30	Break		
11:30	12:30	Critically ill Patient Conference	Carolina Keiko Yamamoto Honda	Hospital Israelita Albert Einstein
			Tatiana Mohovic	Hospital Israelita Albert Einstein
11:30	12:00	Diagnosis of Brain Death in Patients on ECMO	Bárbara Vieira Carneiro	Hospital Israelita Albert Einstein
12:00	12:30	Extubation failure and tracheostomy in brain injured patients	Chiara Robba	Policlinico San Martino
12:30	13:30	MSD Satellite Symposium - New Technologies for Treatment of BGN-MDR Infections	Ricardo Luiz Cordioli	Hospital Israelita Albert Einstein
13:30	15:30	Oncohematology | Transplants	Guilherme Martins de Souza	Hospital Israelita Albert Einstein
			José Eduardo Afonso Junior	Hospital Israelita Albert Einstein
13:30	13:50	Graft-versus-Host Disease: What do Intensivists Need to Know?	Amanda Pascoal Valle Felicio	Hospital Israelita Albert Einstein
13:50	14:10	Cardiotoxicity of Oncological Treatment: Diagnosis and Management	Lianna Ferreira Bringel Cavalieri	Hospital Israelita Albert Einstein
14:10	14:30	Acute Complications of CarT Therapy, What do Intensivists Need to Know?	Lucila Nassif Kerbauy	Hospital A.C. Camargo Cancer Center
14:30	14:50	When and How Should We Escalate Hemodynamic Support in Pre-Tx	Bárbara Vieira Carneiro	Hospital Israelita Albert Einstein
14:50	15:10	Perfusion Markers in Liver TX, Should We Interpret Them Differently?	Bruno Franco Mazza	Hospital Israelita Albert Einstein
15:10	15:30	Discussion		

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August 18, 2023 | Friday				
Start time	**Finish time**	**Activity**	**Moderator/Speaker**	**Institution**
15:30	16:00	"Coffee Break Moise Safra Auditorium"		
16:00	18:00	Neurointensive Care	Polyana Vulcano de Toledo Piza	Hospital Israelita Albert Einstein
			Marcos Vinicius Tadao Fujino	Hospital Israelita Albert Einstein
16:00	16:20	Assessment of Self-Regulation of the Brain in the ICU: Relevance and Bedside Methods (DTC, NIRS, ICP Curve)	Paula Rodrigues Sanches	Hospital Israelita Albert Einstein
16:20	16:40	Late Cerebral Ischemia: Diagnosis, Risk Factors, and Prognostic Impact	Eva Carolina Andrade Rocha	Hospital Israelita Albert Einstein
16:40	17:00	Non-Convulsive Illness: When and How to Treat	Taíssa Ferrari Marinho	Hospital Israelita Albert Einstein
17:00	17:20	Salt and the Brain: Prognostic Significance of Sodium Disorders and Management in Neurocritical Patients	Arnaldo Alves da Silva	Hospital Israelita Albert Einstein
17:20	17:40	Noninvasive ICP Monitoring Methods, for Whom and When?	Felipe Souza Lima Vianna	Hospital Israelita Albert Einstein
17:40	18:00	Discussion		
		Free Themes Award	Elias Knobel	Hospital Israelita Albert Einstein
			Carmen Silvia Valente Barbas	Hospital Israelita Albert Einstein
			Thiago Domingos Corrêa	Hospital Israelita Albert Einstein
			Thais Dias Midega	Hospital Israelita Albert Einstein
18:00		Closing		

XXX International Symposium on Mechanical Ventilation				
August 16-18, 2023				
Venue: Camilla Bueno Auditorium				
August 16, 2023 | Wednesday				
Start time	**Finish time**	**Activity**	**Moderator/Speaker**	**Institution**
10:30	12:30	Conference: Mechanical Ventilation	Telma Antunes	Hospital Israelita Albert Einstein
			Marcos Borges Amorim	USP/InCOR
10:30	11:00	Advances in Mechanical Ventilation	Marcus Josephus Schultz	Amsterdam UMC, Amsterdam, The Netherlands & Medical University of Wien, Vienna, Austria
11:00	11:30	How to Measure Compliance and Resistance and P0,1	Carmen Silvia Valente Barbas	Hospital Israelita Albert Einstein
11:30	12:00	How to Measure Transpulmonary Pressure	Marcos Borges Amorim	USP/InCOR
12:00	12:30	Assessment and Prediction of A Difficult Airway	Roseny dos Reis Rodrigues	Hospital Israelita Albert Einstein
12:30	13:30	MEDTRONIC Satellite Symposium - Asynchrony, PAV PLUS and IE Sync	Carmen Silvia Valente Barbas	Hospital Israelita Albert Einstein
13:30	15:30	Indications for Ventilatory Support in Acute Respiratory Failure	Carmen Silvia Valente Barbas	Hospital Israelita Albert Einstein
			Roberta Fittipaldi Palazzo	Hospital Israelita Albert Einstein
13:30	13:50	Indications for Respiratory Support in Hypoxemic ARF	Carmen Silvia Valente Barbas	Hospital Israelita Albert Einstein
13:50	14:10	Indications for ventilatory support in Asthma / COPD	Roberta Fittipaldi Palazzo	Hospital Israelita Albert Einstein
14:10	14:30	Indications for ventilatory support in neuromuscular ARF	Ellen Pierre De Oliveira	InCOR
14:30	14:50	Indications for Ventilatory Support in Neurological Patients	Roberta Fittipaldi Palazzo	Hospital Israelita Albert Einstein
14:50	15:10	What is the Best Hemodynamic Monitoring for Patients with SAcute Respiratory Failure?	Daniel De Backer	CHIREC Hospitals, Bélgica
15:10	15:30	Discussion		
15:30	16:00	"Coffee Break Moise Safra Auditorium"		
16:00	18:00	Ventilation in Neurological Patients	Bruno Franco Mazza	Hospital Israelita Albert Einstein
			Airton Leonardo de Oliveira Manoel	Hospital Geral do Grajaú
16:00	16:20	Ventilation in Hemispheric Isquemic Stroke Patients	Bruno Franco Mazza	Hospital Israelita Albert Einstein
16:20	16:40	Ventilation in Hemispheric Stroke Patients	Felipe Souza Lima Vianna	Hospital Israelita Albert Einstein
16:40	17:00	Ventilation in Hemispheric Isquemic Stroke Patients	Dante Moreira Lima	Hospital Israelita Albert Einstein
17:00	17:20	How to Adjust PaCO2 in Neurological Patients	Mariangela Pimentel Pincelli	Universidade Federal de Santa Catarina
17:20	17:40	Mechanical Ventilation in Severe TBI	Sérgio Nogueira Nemer	Governo do Estado do Rio de Janeiro
17:40	18:00	Discussion		
18:00	19:00	FREE TOPICS - ABSTRACTS PRESENTATION	Vinicius Barbosa Galindo	Hospital Israelita Albert Einstein
			Uri Adrian Prync Flato	Hospital Israelita Albert Einstein
			Filipe Utuari de Andrade Coelho	Hospital Israelita Albert Einstein
18:00	18:07	4DMC - Impact of peripheral muscle strength on extubation success after cardiac surgery	André Luiz Lisboa Cordeiro	
18:10	18:17	4DMD - Risk stratification for prolonged mechanical ventilation after cardiac surgery	André Luiz Lisboa Cordeiro	
18:20	18:27	4DMT - Level of knowledge of a population about cardiopulmonary resuscitation	Bárbara Carvalho dos Santos	
18:30	18:37	4DMY - Perception of the family on nursing assistance in an adult intensive therapy unit	Pâmmela Tarcila Coelho Moraes	
18:40	18:47	4DND - Measures to combat Rocky Mountain spotted fever from the point of view of health law	Gustavo Felipe Berça Ogata	
18:50	18:57	4DNW - Experience with the hand hygiene team in the Intensive Care Unit	Giselle Cordeiro Saucedo Dominguez	
19:00		Closing		

August 17, 2023 | Thursday				
Start time	**Finish time**	**Activity**	**Moderator/Speaker**	**Institution**
08:00	10:00	Imaging for Diagnosis and Monitoring of the Critically ill Patient	Carla Luciana Batista	Hospital Israelita Albert Einstein
			Karina Tavares Timenetsky	Hospital Israelita Albert Einstein
08:00	08:20	Evaluation of the Lungs with Ultrasound	Ricardo Luiz Cordioli	Hospital Israelita Albert Einstein
08:20	08:40	Ultrasound Evaluation of the Diaphragm	Carla Luciana Batista	Hospital Israelita Albert Einstein
08:40	09:00	The Role of Chest CT	Rodrigo Bastos Duarte Passos	Hospital Israelita Albert Einstein
09:00	09:20	Electrical Impedance Tomography: Ventilation and PEEP Titration	Karina Tavares Timenetsky	Hospital Israelita Albert Einstein
09:20	09:40	Electrical Impedance Tomography to Assess Perfusion and Asynchrony	Glasiele Cristina Alcala	Massachusetts General Hospital, affiliated with Harvard Medical School
09:40	10:00	Discussion		
10:00	11:00	Pfizer Satellite Symposium - Challenges in the management of MDR gram negative bacteria in bloodstream infections in the ICU environment	Luiz Marcelo Sá Malbouisson	Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo
11:00	11:30	Break		
11:30	12:30	Conference: Mechanical Ventilation | Difficult Intubation	Luiz Marcelo Sá Malbouisson	Hospital Israelita Albert Einstein
			Márcia Jacomelli	Hospital Israelita Albert Einstein
11:30	12:00	Using Videolaryngoscopy for Intubation	Luiz Marcelo Sá Malbouisson	Hospital Israelita Albert Einstein
12:00	12:30	What Bronchoscopy Can Help With	Márcia Jacomelli	Hospital Israelita Albert Einstein
12:30	13:30	Mindray Satellite Symposium - Asynchrony, Mechanical Power and Protective Ventilation: how to avoid VILI	Alexandre Marini Ísola	Mindray
13:30	15:30	Noninvasive Ventilatory Support and High Flow	Telma Antunes	Hospital Israelita Albert Einstein
			Eliana Bernadete Caser	Universidade Federal do Espírito Santo and Hospital Unimed Vitória/ES
13:30	13:50	Rational Use of Oxygen in Intensive Care Units	Raquel Afonso Caserta Eid	Hospital Israelita Albert Einstein
13:50	14:10	Understanding High Oxygen Flow and Its Application	Eduardo Colucci	Hospital Israelita Albert Einstein
14:10	14:30	Evolution and Indications for NIV	Eliana Bernadete Caser	Universidade Federal do Espírito Santo and Hospital Unimed Vitória/ES
14:30	14:50	High Flow Oxygen and NIV in Weaning from Mechanical Ventilation	Telma Antunes	Hospital Israelita Albert Einstein
14:50	15:10	NIV and CNAF, until When to insist and When Not to Start?	Marcus Josephus Schultz	Amsterdam UMC, Amsterdam, The Netherlands & Medical University of Wien, Vienna, Austria
15:10	15:30	Discussion		
15:30	16:00	Coffee Break Moise Safra Auditorium		
16:00	18:00	Ventilation of Patients with Severe ARDS	Carmen Silvia Valente Barbas	Hospital Israelita Albert Einstein
			Gustavo Faissol Janot de Matos	Hospital Israelita Albert Einstein
16:00	16:20	Applying protective ventilation in severe ARDS	Carmen Silvia Valente Barbas	Hospital Israelita Albert Einstein
16:20	16:40	Prone Positioning the Severe ARDS Patient	Marcos Soares Tavares	Hospital 9 de Julho
16:40	17:00	Evaluation of Mechanical Ventilation Trials in ARDS	Ary Serpa Neto	ANZIC-RC and Austin Hospital
17:00	17:20	ECMO in Severe ARDS	Gustavo Faissol Janot de Matos	Hospital Israelita Albert Einstein
17:20	17:40	What has changed with the new ESICM ARDS consensus?	Carmen Silvia Valente Barbas	Hospital Israelita Abert Einstein
17:40	18:00	Discussion		
18:00	19:00	FREE TOPICS - ABSTRACTS PRESENTATION	Thais Dias Midega	Hospital Israelita Albert Einstein
			Guilherme Martins de Souza	Hospital Israelita Albert Einstein
			Mayara Laise Assis	Hospital Israelita Albert Einstein

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August 17, 2023 | Thursday				
Start time	**Finish time**	**Activity**	**Moderator/Speaker**	**Institution**
18:00	18:07	4DNM - Association between delta anion gap/delta bicarbonate and outcome of surgical patients admitted to intensive care	Fabio Barlem Hohmann	
18:10	18:17	4DNN - Prognosis of surgical oncology patients during the Covid-19 pandemic in Brazil: the coronal study	Felipe Souza Lima Vianna	
18:20	18:27	4DNJ - Ultrasound-accelerated catheter-directed thrombolysis: a new tool for the treatment of pulmonary embolism in Brazil	Bruno Pagnin Schmid	
18:30	18:37	4DMX - Tetraplegy due to intermittent acute porphyria: the role of physiotherapy in the rehabilitation process – a case report	Henrique Gerardus van der Laan	
18:40	18:47	4DNP - Educational technology on palliative care for nursing undergraduates: previous note	Bianca Pimentel Silva	
18:50	19:00	Discussion		
19:00		Closing		

August 18, 2023 | Friday				
Start time	**Finish time**	**Activity**	**Moderator/Speaker**	**Institution**
08:00	10:00	Adjusting Assisted Ventilation	Ellen Pierre De Oliveira	InCOR
			Mauro Roberto Tucci	Instituto do Coração
08:00	08:20	Diagnosing and Correcting Ineffective Efforts	Carmen Silvia Valente Barbas	Hospital Israelita Albert Einstein
08:20	08:40	Diagnosing and Correcting Double Triggering	Mauro Roberto Tucci	Instituto do Coração
08:40	09:00	Diagnosing and Correcting Reverse Triggering	Ellen Pierre De Oliveira	InCOR
09:00	09:20	Adjusting Patient's Neural Time and Mechanical Time of Ventilation	Arthur Oswaldo de Abreu Vianna	Clínica São Vicente, Rede D'Or São Luiz/RJ
09:20	09:40	Mechanical Ventilation Automatic Modes	Marcus Josephus Schultz	Amsterdam UMC, Amsterdam, The Netherlands & Medical University of Wien, Vienna, Austria
09:40	10:00	Discussion		
10:00	11:00	Biomerieux Satellite Symposium - We need an early diagnosis of infectious syndromes! How and why?	Ricardo Luiz Cordioli	Hospital Israelita Albert Einstein
11:00	11:30	Break		
11:30	12:30	Conference: Mechanical Ventilation	Karina Tavares Timenetsky	Hospital Israelita Albert Einstein
			Ellen Pierre De Oliveira	InCOR
11:30	12:00	Volume management in ARDS: an old discussion or a new problem?	Daniel De Backer	CHIREC Hospitals, Bélgica
12:00	12:30	New ARDS definitions: what changes in clinical practice?	Marcus Josephus Schultz	Amsterdam UMC, Amsterdam, The Netherlands & Medical University of Wien, Vienna, Austria
12:30	13:30	MSD Satellite Symposium - New technologies for treating MDR-GNB infections	Ricardo Luiz Cordioli	Hospital Israelita Albert Einstein
13:30		Closing		

III Einstein International Symposium on Intensive Care				
August 16-18, 2023				
Venue: Camilla Bueno Auditorium				
August 18, 2023 | Friday				
Start time	**Finish time**	**Activity**	**Moderator/Speaker**	**Institution**
13:30	15:30	Intensive Care Nephrology | Coagulation and Hemostasis	Bruno Caldin da Silva	Hospital Israelita Albert Einstein
			Niklas Söderberg Campos	Hospital Israelita Albert Einstein
13:30	13:50	Intermittent vs Continuous Dialysis in Critically ill Patients: Recent Scientific Evidence	Rogerio da Hora Passos	Hospital São Rafael
13:50	14:10	Hemolytic-Uremic Syndrome in Critically ill Patients: Etiologies and Treatment	Bento Fortunato Cardoso dos Santos	Hospital Israelita Albert Einstein
14:10	14:30	Management of Hepatorenal Syndrome: Recent Scientific Evidence	Roberto Camargo Narciso	Hospital Israelita Albert Einstein
14:30	14:50	Use of Hemostatic Adjuvants: Prothrombin Complex and Fibrinogen. What the Latest Evidence Recommends	Roseny dos Reis Rodrigues	Hospital Israelita Albert Einstein
14:50	15:10	Updates on Postpartum Hemorrhage - How to Change Outcomes?	Fernando Souza Nani	Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo
15:10	15:30	Discussion		
15:30	16:00	"Break Moise Safra Auditorium"		
16:00	18:00	ECMO / ICU Imaging	Bruno de Arruda Bravim	Hospital Israelita Albert Einstein
			Tais Rodrigues de Lara	Hospital Israelita Albert Einstein
16:00	16:20	Pulmonary, Cardiac and Muscle USG to Predict Failure to Wean from Mechanical Ventilation	Carla Luciana Batista	Hospital Israelita Albert Einstein
16:20	16:40	Avoid Congestion or Dryness: How USG Can Help Me, VEXUS Protocol	Adrian Wong	King's College Hospital, London
16:40	17:00	POCUS during NIV, Is It Useful or Should It Not Be Used?	Carolina de Moraes Pellegrino	Hospital Israelita Albert Einstein
17:00	17:20	ECMO: How to Train Intensivists?	Pedro Paulo Zanella do Amaral Campos	Hospital Israelita Albert Einstein
17:20	17:40	Pre-cannulation ventilation strategies: how to make an adequate management?	Daniel Joelsons	Hospital Israelita Albert Einstein
17:40	18:00	Discussion		
18:00		Closing		

Presentation Abstracts

001

Ultrasound-accelerated catheter-directed thrombolysis: a new tool for the treatment of pulmonary embolism in Brazil

Bruno Pagnin Schmid[1], Marina Dantas Henrique[1], Guilherme Marcelino de Miranda[1], Marcela Juliano Silva Cunha[1], Leonardo Guedes Moreira[1], Francisco Leonardo Galastri[1], Breno Boueri Affonso[1], Gustavo Faissol Janot de Matos[1], Felipe Nasser[1]

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Introduction: Pulmonary Embolism (PE) is a major cause of acute mortality and long-term morbidity.[1] Anticoagulation and systemic thrombolysis are the initial treatment methods but can be associated with hemorrhagic side effects, excluding a significant portion of patients from these strategies.[2] The EkoSonic Endovascular System (EKOS), an ultrasound- facilitated, catheter-directed, low-dose fibrinolysis therapy, emerges as a valuable option.[2,3]

Objective: To describe a case of a patient with pulmonary embolism treated with EKOS.

Case report: A 63- year-old female patient presented to the emergency department with acute dyspnea. Her comorbidities include a non-small-cell lung carcinoma treated with surgical resection and epidermal growth factor receptor tyrosine kinase inhibitors. Besides, she had been submitted to a transthoracic lung biopsy 2 days previous hospital admission for the investigation of tumor metastasis. Physical examination showed a conscious patient, a heart rate at 126bpm, blood pressure at 130/76mmHg, respiratory rate at 40bpm, and peripheral oxygen saturation at 82%. The Pulmonary Embolism Severity Index was 163 and troponin levels were elevated. An echocardiography revealed an increased right ventricle/left ventricle ratio (RV/LV), and an elevated pulmonary artery systolic pressure (PASP=44mmHg). A CT pulmonary angiography (CTPA) was also performed, showing a filling defect in the main trunk of the pulmonary artery with extension to the left lobar and segmental pulmonary arteries. After a multidisciplinary discussion, the EKOS system was indicated. Under general anesthesia, using anterograde percutaneous access of the right common femoral a 5.4-Fr x 18cm treatment zone EKOS system was positioned from the main pulmonary artery to the left segmental pulmonary artery and the thrombolytic therapy was started. Alteplase was given through the catheter with a total of 24 mg over 24 hours and anticoagulation with non-fractioned heparin was initiated. There were no intraoperative complications. A 24-hour control CT was performed showing significant thrombus resolution. Besides, an echocardiography demonstrated improvement in RV/LV ratio and in the PASP (31mmHg). A 36-hour control angiography showed important improvement in the left lung perfusion and the device was retrieved. The patient was extubated on the third day and received hospital discharge after 12 days. Complications included an oropharyngeal bleeding with no hemodynamic repercussion.

Discussion: This is the first description of the use of EKOS in the treatment of a patient with PE in

Brazil. The rationale behind this therapy is using ultrasound energy to promote mechanical thrombus breakdown, which increases the available surface area for the thrombolytic agent's action.[2,3] Thus, there is reduction in the total thrombolytic dose enabling more patients to be submitted to an effective recanalization strategy.

Conclusion: The Ekos is a promising additional tool for the treatment of selected cases of pulmonary embolism.

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002

Experience with the hand hygiene team in the Intensive Care Unit

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Category: Infection

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Introduction: Knowledge of hand hygiene as a measure to prevent Health Care-Related Infections is old, however, this action is still neglected by many health professionals, putting other patients and society in general at risk after leaving the hospital. hospital unit, being responsible for community infections1. We live today, even more so after a pandemic, in the era of patient safety and care with hand hygiene, and it is just as important to emphasis the guidelines, such as the results of actions focused on patient safety in hospital units.(1)

Objective: Report the experience of implementing measures to increase patient safety, in relation to hand hygiene, by professionals in a private hospital institution.

Methods: This is an experience report of an experience on professional training with managerial and educational actions involving from the board of directors to the professionals who assist the patient of a private hospital institution in the State of São Paulo. The experience started on October 20, 2019 and continues successfully until today.

Results: After the recommendation by the World Health Organization (WHO) on patient safety and hand hygiene, the hospital, through the Health Care Related Infection Control Service with the support of the board, set up the hand hygiene team. A folder and training were created for internal dissemination and attracting employees to sign up and participate. The incentive was carried out with gifts and recognition for participation. At first, the form provided by the WHO was used, later adapted to the reality of the hospital, and transferred to Google Forms available on the networks, allowing access to the employee to fill in the form immediately and after their evaluations in loco during the shifts. The service has access and can, in real time, monitor the actions, as well as non-compliance with the five moments, helping with the action plan and proposals for improvements and training. The document has all the categories involved in assistance.

Conclusion: The data are disclosed monthly to the entire team through a folder in the form of a mental map with the evaluated categories and the number of opportunities and fulfillments carried out. It appears that from this implementation, it is possible to identify process failures at the end, listen to them and, with that, be able to directly reach the observed failure and, with the team's suggestions, establish an action plan for each category, according to with the duty and professional profile. With this team, it was possible to increase the consumption of alcohol gel in the ICU sector and maintain the average above the CVE recommendation of 20 ml per pac/day.

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Presentation Abstracts

CONTENTS

003

Measures to combat Rocky Mountain spotted fever from the point of view of health law

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Introduction: Although it is a compulsory communication disease, Rocky Mountain spotted fever is of great concern from the point of view of health law when analyzing the incidence in conjunction with the mortality rate along with the difficulty of diagnosis and the period of about 15 days for the real compatibility confirmation.(1) Thus, there is a need to create coping protocols that aim to reduce contact with the tick that transmits the disease, as well as to reduce its population.(2)

Objective: The objective is to bring sanitary proposals for the preventive confrontation of Rocky Mountain spotted fever in order to reduce the number of infected with Rocky Mountain spotted fever based on sanitary measures in light of what was done during the fight against the COVID-19 pandemic.

Methods: The research is ex-post facto, using, in addition to facts arising from the fight against the COVID-19 pandemic, bibliographical references, and statistical research. The used approach is quali-quantitative, being, the study, of applied nature with an explanatory objective.

Results: Analyzing the sanitary measures adopted to face COVID-19 and adapting them according to the transmission, pathogenesis, and prophylaxis, the possible measures to face it have arrived at a) requirement of a certificate of non-occurrence of spotted fever in the region that will be carried out event/ecological tourism for issuing a permit and/or authorization for activity; b) notification and inspection of rural producers and/or residents of the contagion region, in order to identify and combat the etiological agent; c) mandatory notification of outbreaks in animals, for isolation and combating the tick (through the collection and chemical products); d) mandatory specific examination for spotted fever for the commercialization of products of animal origin, in order to draw a map of contamination and confrontation.(3)

Conclusion: Although there is no prophylactic drug for the disease, there is a need for regulation to deal with cases of Rocky Mountain spotted fever, in order to reduce contact with the etiological agent as well as reduce the acarological population. With the adoption of sanitary measures such as those mentioned above, it is observed that there is the possibility of reducing cases of Rocky Mountain spotted fever in humans being.

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004

Impact of peripheral muscle strength on extubation success after cardiac surgery

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Category: Cardiology

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Introduction: Although an experienced clinician can predict the likely outcome of attempting to wean the patient from mechanical ventilation, it is desirable to have predictive indices that can be easily measured and widely applied.(1) In this scenario there is a need to understand whether peripheral muscle strength can be a predictor after cardiac surgery.

Objective: To evaluate the impact of peripheral muscle strength on extubation success after cardiac surgery.

Methods: This is a prospective cohort study. Evaluation of ventilatory, peripheral muscle strength (MRC) and rapid shallow breathing index (IRRS) was performed at 30 and 10 minutes during the Spontaneous Breath Test (SBT). Patients were extubated and followed up for 48 hours to verify the success or failure of extubation and to compare the variables collected preoperatively.

Results: Sixty-six patients were evaluated, 55 (83%) were classified as successful and 11 (17%) as failure to wean. MRC 30 minutes before SBT with cutoff value 44±4, with sensitivity and specificity, respectively 77% and 84%, AUC 0.864 and 95%CI: 0.69-1.00. On the other hand, the MRC 10 minutes before SBT owed a cutoff value of 49±5, with sensitivity of 55%, specificity of 80%, AUC 0.845 and 95%CI: 0.77-1.00. Finally, the IRRS 10 minutes before SBT with a cutoff value of 45±4, sensitivity 30%, specificity 70%, AUC 0.476 and 95%CI: 0.22-0.71.

Conclusion: We conclude that peripheral muscle strength is a predictor of extubation success in patients undergoing cardiac surgery.

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Presentation Abstracts

CONTENTS

005

Level of knowledge of a population about cardiopulmonary resuscitation

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Introduction: Occurrences of cardiorespiratory arrest outside the hospital are serious and represent a major public health problem. According to the Brazilian Society of Cardiology, cardiovascular diseases are the most responsible for deaths in Brazil, totaling from January to June 2023 approximately 179,656 deaths. Such numbers demonstrate the importance of offering the lay population adequate training on first aid in these cases, seeking to increase the chances of survival of the victim.[1-3]

Objective: To analyze the level of knowledge of a population about cardiopulmonary resuscitation before and after the educational lectures.

Methods: This is a cross-sectional, interventional and quantitative study, carried out in a park in the city of Teresina-PI, in 2016. Two questionnaires, produced by the researchers, were applied, one before and the other after a theoretical-practical class on support of life in cases of cardiac arrest. The research was approved by the Research Ethics Committee of the State University of Piauí-UESPI, with the number 50397815.5.0000.5209. All participants signed an free and informed consent term. Data were organized in Microsoft Office Excel 2010 spreadsheets and analyzed using Pearson Chi-square statistical tests for discrete random variables and Student's t test for continuous random variables. **Results:** One hundred and fourteen (114) individuals were included. In the application of the first questionnaire, 85 volunteers (74.6%) answered that they did not know how to identify a cardiac arrest ($p<0.001$). Regarding the signs of a cardiorespiratory arrest, 72 people (63.16%) answered "shortness of breath" ($p<0.001$). Regarding the initial measures in these cases, 71 individuals (62.3%) answered the item "remove the person's clothes" ($p=0.0087$). In the question about the possibility of performing resuscitation maneuvers, 54 people (47.4%) answered

"yes", while 60 volunteers (52.6%) answered "no", with no significant difference between the answers. In the second questionnaire, where the volunteers were asked to indicate the first aid steps in cases of cardiorespiratory arrest, 64 people (56.1%) answered all the resuscitation steps correctly and 108 individuals (94.7%) answered that they believed they were able to perform cardiopulmonary resuscitation.

Conclusion: This work demonstrated that the participants had little knowledge about basic life support in cardiorespiratory arrest and marked incorrect items about first aid to victims. After the training offered by the researchers, most of the participants got the basic life support steps right and found themselves able to offer first aid in a cardiac arrest, demonstrating that even a quick and isolated action can help to increase the levels of knowledge and security of the population. With this, it is concluded that it is important to invest in training for the lay population on first aid, seeking greater effectiveness of the support provided outside hospitals to possible victims of cardiac arrest.

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Presentation Abstracts

CONTENTS

006

Perception of the family on nursing assistance in an adult intensive therapy unit

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Introduction: The Intensive Care Unit (ICU) is a complex care unit that aims to safely and effectively care for the patient who needs careful attention, in order to achieve clinical improvement. Among the treatment modalities used in the ICU, several technologies can be included, either to replace or to help the patients' vital functions, inserting the support of drugs and sophisticated equipment.[1-3]

Objective: To know the family perception of nursing care in an intensive care unit.

Methods: This is field research with a qualitative approach. Held at the *Hospital Beneficente Portuguesa D. Luiz*, located in the city of Belém (Pará), private hospital affiliated with the SUS (*Sistema Único de Saúde* – Unified Healthy System). The hospital has two Intensive Care Unit centers and a Coronary Intensive Care Unit, with a General Intensive Care Center that preferably handbles neurology and the Cardiological Treatment Unit-UCA, with 15 beds, operating for 30 years with a technical staff in each shift formed by two physiotherapists and eight nursing technicians.

Results: It was noticed that the bureaucratized routine of the reasons that hinder or prevent the more frequent dialogue between the nursing team and the relatives of hospitalized patients. The ICU environment becomes less impersonal for patients and their families when there is effective communication. In this sense, it is understood that communication is also a determining factor for the practice of humanizing care in the ICU.

Conclusion: From this perspective, it was observed that health communication, when used properly, is an excellent work tool in health care, as it promotes greater interaction, facilitating the creation of bonds of thrust and obtaining a better degree of satisfaction in the services offered, both by the client and by the team providing the service. Furthermore, it was found that family members felt welcomed by the team when professionals showed feelings of respect, affection, understanding and attention, that care transcends performing procedures. In this sense, making health professionals aware of the importance of the family member in this moment of crisis is the first step towards a change in behavior and a better acceptance of their presence in the ICU environment.

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007

Risk stratification for prolonged mechanical ventilation after cardiac surgery

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Introduction: After Cardiac Surgery (CS) patients require mechanical ventilation (MV) due to intraoperative and postoperative factors.[1] These factors may contribute to a prolonged period of MV, which may be associated with worse outcomes.[2,3] These factors are already known in other patient profiles, but this gap still exists when dealing with CS.

Objective: To stratify the risk factors for mechanical ventilation in patients undergoing cardiac surgery.

Methods: This is a prospective cohort conducted with patients undergoing CS. After surgery, the patient was admitted to the Intensive Care Unit (ICU), connected to MV and the whole process of ventilatory adjustment and weaning was conducted according to the unit routine. They were divided into two groups, the group that remained for more than 28 days on MV and the group with less than 28 hours. We compared the intra- and postoperative variables of the groups to identify which factors were associated with prolonged MV.

Results: We evaluated 122 patients, and 33 remained on prolonged MV. In the comparison between groups, we verified that the time of surgery longer than 4 hours, cardiopulmonary bypass time (8912 *versus* 1059, $p<0.001$), presence of bleeding (10% *versus* 45%, $p<0.001$) and dependence on inotropics (27% *versus* 64%, $p<0.001$) were the main factors associated to prolonged MV.

Conclusion: We concluded that factors such as length of surgery, cardiopulmonary bypass, presence of bleeding and use of inotropic agents favored prolonged mechanical ventilation.

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Presentation Abstracts

CONTENTS

008

Educational technology on palliative care for nursing undergraduates: previous note

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Introduction: Palliative Care (PC) promotes quality of life in the face of life-threatening illnesses, providing physical, psychosocial and spiritual assistance to patients and their families. When approached within the training academy, within nursing students, it is still a little explored theme, thus requesting means that facilitate the approach. Educational technological products, in the context of health, are instruments that help the exchange of knowledge in the teaching-learning process during graduation.[1]

Objective: Build an educational technology on palliative care for nursing students.

Methods: Methodological research with exploratory qualitative approach, which proposes to build an educational technology on palliative care for undergraduate nursing students of a public university, located in the Amazon, in the North Region, municipality of Belém-PA, Brazil. The study will be carried out in three stages: integrative literature review, diagnostic situation and technology production. Data collection will take place with the application of structured interviews, using the methodological resources of the snowball technique. The IRAMuTeQ software will assist in the organization and analysis of the data obtained. The construction of the technology will succeed the information obtained at the end of the data analysis, which will direct the selection of topics and the development of content.

Results: The integrative literature review (stage 1) reached a sample of four articles. The synthesis of studies made it possible to demonstrate aspects such as: lack of emotional and technical preparation among nursing students with regard to assisting people in PC; there are communication challenges in the care process and gaps in scientific production on this topic. Step 2 will be carried out with nursing students to identify knowledge about PC. Considering that the assistance in PC requires identification of the needs of the patient, thus executing strategies used to minimize the suffering of patients, it is necessary to learn about social support networks, comfort interventions and communication. [2] Based on these steps, in step 3 an educational technology will be built. Educational technologies are structures shaped by a set of theoretical-practical actions, using scientific knowledge in the development of technological solutions with the aim of mediating teaching and learning processes. [3]

Conclusion: The development of an educational technology for nursing students about people in palliative care will enable reflection and interest on the subject, with a view to obtaining humanized and comprehensive care. Also having as contributions, the development of a product that will contribute to new forms of teaching-learning, stimulating critical and reflective reasoning, helping to develop the necessary skills to implement the palliative care philosophy.

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Presentation Abstracts

CONTENTS

009

Effects of inspiratory muscle training on weaning from mechanical ventilation and other aspects: a systematic review

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Introduction: About 35% of patients admitted to Intensive Care Units (ICU) require mechanical ventilation. Prolonged mechanical ventilation predisposes patients to increased risks of MV- associated pneumonia, tracheal ischemia, lung damage, and diaphragmatic dysfunction. Such problems increase the risk of mortality and complications. Among the proposed treatments in these cases, inspiratory muscle training has been used as a means of improving the strength and endurance of the respiratory muscles. There are still few studies that evaluate inspiratory muscle training in patients on MV as a means of optimizing weaning.[1-3]

Objective: To verify the effects of inspiratory muscle training on weaning from mechanical ventilation.

Methods: This study is a systematic review, where a search on the subject was carried out in the Pubmed and Virtual Health Library databases, in accordance with PRISMA recommendations, from January to June 2023. The descriptors were used inspiratory muscle training AND mechanical ventilation AND weaning, in Portuguese, English and Spanish. Randomized clinical trials where inspiratory muscle training was used during weaning or post-weaning from mechanical ventilation were included, excluding studies that used other techniques compared to respiratory muscle training, systematic and literature reviews, case studies, cohort studies and other designs that were not randomized clinical trials. The articles found dated from 2003 to 2021.

Results: In all, 79 results were found, being analyzed after analyzing titles and abstracts, eight randomized clinical trials. The groups that underwent inspiratory muscle training showed an increase in inspiratory strength assessed by the maximum inspiratory pressure (p=0.02), improvement in quality of life (p=0.03) and reduction in in-hospital mortality (p=0.051). Some authors did not find significant reductions in weaning time, while others found better results in the intervention group on the 60th day in the ICU in terms of survival (p=0.030) and weaning (p=0.001). No significant differences in the possibility of extubation

and no reduction in the rate of reintubation were reported. In older studies, inspiratory muscle strength remained constant throughout mechanical ventilation, regardless of whether or not mechanical ventilation was performed.

Conclusion: Inspiratory muscle training has shown positive results in improving inspiratory muscle strength, quality of life and reducing mortality, however, its effectiveness regarding weaning is still controversial, with studies demonstrating improvement in weaning, others not. Older studies tended to demonstrate fewer effective results from the technique, while the most current ones observed better outcomes with the use of training.

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Presentation Abstracts

CONTENTS

010

Evaluation of the thigh sonographic index in patients with copd in a public hospital in Mato Grosso, Brazil: a cross- sectional study

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Introduction: Musculoskeletal dysfunction results in disability and mortality in patients with Chronic Obstructive Pulmonary Disease (COPD). [1] Body mass, weight and height influence quadriceps muscle thickness. Thus, the thigh sonographic index (IST) becomes a reliable parameter in the assessment of muscle mass by ultrasound in COPD. [2]

Objective: Analyze anterior thigh muscle thickness from the adjusted thigh sonographic index in patients with COPD.

Methods: Cross-sectional, observational study carried out at the Pneumology Outpatient Clinic of the *Hospital Universitário Júlio Muller* (HUJM). This study was approved by the Human Beings Ethics Committee of the HUJM under CAAE number: 58263722.0.0000.5541, all participants signed the free and informed consent form. The study included 27 patients, 12 males and 15 females, divided into two groups: Group A (participants with COPD) and Group B (patients without COPD). Patients were evaluated regarding: Spirometry (FEV1, FEV1/FVC); Analysis of Body Mass Index (BMI) and Quadriceps Thickness Measurement (QME) by ultrasound. In measurement of the QME the protocol by Braga et al.,[3] was adopted, measuring the middle of the thigh and 2/3 between the anatomical points of the iliac crest and the upper edge of the patella of the dominant limb. The images were obtained with a TUS-A 300 model device (aplio 300) in B mode, with a linear transducer (14L5) and variable frequency between 5 and 10 MHz. Two evaluators (E.A.B vs A.P.C.B.A) performed three measurements each, at different times, considering the best image obtained. The thigh sonogram index was calculated by the anterior thigh muscle thickness divided by the BMI. All date were collected and the statistical analysis was performed using the statistical program Statistical Package for Social Sciences (SPSS), version 22.0. Data were expressed as the mean±standard deviation and $p < 0.05$ was taken as the criterion of significance.

Results: The studies by Kara et al.[2] defined IST-adjusted cut-off values by gender, with an index ≤1.0 in females and ≤1.4 in males, indicating loss of muscle strength. In our study, a good correlation of IST was observed in both groups, and in relation to males, the COPD Group had IST (1.0±0.3) *versus* the Group without COPD, IST (0.9±0.1), with statistical difference p= 0.020. The female gender in the COPD Group had IST as mean and standard deviation (0.8±0.2) *versus* Group without COPD, IST (0.9±0.2), with statistical difference p=0.037. Regarding the reproducibility of the QME, the Person correlation was analyzed, which showed a good correlation between the evaluators (R2=0.90; p>0.001) with 95%CI:0.89-0.9).

Conclusion: IST suggests to be a reliable index, with good accuracy and clinical relevance. The good correlation for the reproducibility of the QME by ultrasonography,

infers that this index can serve as a parameter to evaluate the loss of muscle mass in patients with COPD, based on the cutoff values for both sexes.

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Presentation Abstracts

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011

ICU Mobility Scale as a predictor of hospital mortality in critically ill patients

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Introduction: The ICU Mobility Scale (IMS) was developed to provide a structured method to collect mobility data, to assist physical therapists monitoring recovery, to help researchers objectively quantify mobility milestones, and to compare the levels of mobility achieved in different studies[1]. However, so far, there are no data that mobility assessed by this scale is capable of predicting mortality after ICU discharge.(1)

Objective: To assess whether the ICU mobility scale is capable of predicting hospital mortality after ICU discharge. In addition, to evaluate the association between mobility and length of stay and loss of mobility during ICU stay.

Methods: Observational, prospective, unicentric study, carried out in 3 intensive care units (ICUs) of the institution that evaluated 784 critically ill patients. The exclusion criteria were as follows: patients aged <18 years, unable to walk independently before hospitalization, neurologically impaired, incapable of communicating, with a terminal/end-of-life status, or had data loss. All other patients were included. The IMS is an 11-point ordinal scale with scores ranging from 0 (absence of mobilization) to 10 (independent ambulation). Patients were categorized into low (IMS=0 to 2), moderate (IMS=3 to 5) and high mobility (IMS=6-10). The IMS mobility scale was applied by physiotherapists at the institution and mobility was quantified: 30 days before admission, admission and discharge from the ICU. Admission diagnosis, SAPS3, SOFA in the first 24 hours, comorbidities, laboratory tests, invasive and non-invasive mechanical ventilation, among others, were evaluated.

Results: Patients with moderate mobility were older and had worse SAPS3 values than patients with low and high mobility ($p<0.05$). Thirty days before admission, 6.5% of patients had low or moderate mobility. There was a worsening of these values for 18.4% of patients until the day of discharge from the ICU. Approximately half of the patients did not recover their mobility when compared to before admission. Patients with moderate to low mobility had a longer hospital stay after ICU discharge than patients with high mobility 15.0±16.0 *vesus* 7.3±13.0 days, respectively. After performing the univariate analysis, Charlson comorbidity index, age, SAPS3, IMS discharge from ICU and SOFA score were included in the multivariate Cox regression analysis to assess the factor associated with mortality after discharge from the ICU. The results showed that low mobility (OR 2.51, 95%CI:1.18-5.31, p=0.016) and SAPS3 (OR 1.05, 95%CI: 1.003-1.10, p=0.038), were independently associated with in-hospital mortality after ICU discharge.

Conclusion: Low mobility values assessed on the day of ICU discharge using the IMS scale may predict mortality after ICU discharge.

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Presentation Abstracts

CONTENTS

012

Prognostication of lung ultrasound compared with chest tomography among patients with SARS-CoV-2 in the Intensive Care Unit

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Introduction: The major cause of mortality in patients affected by COVID-19 disease is the development of acute respiratory distress syndrome (SARS-CoV-2) due to the intense inflammatory process that affects the lungs associated with thrombotic events in the microcirculation, promoting refractory hypoxemia and multiple dysfunctions of organs. The screening of suspected or confirmed patients is based on clinical, radiological and laboratory evaluation. Screening through pulmonary ultrasound[1,2] and bedside echocardiography help in decision-making and the patient's prognosis. [3]

Objective: The aim of the study was to assess the correlation between Lung Ultrasonography Scores (LUS) and the percentage of ground glass assessed by chest computed tomography (CT).

Methods: An observational cohort study was carried out from 2020 to 2021 in the Intensive Care Unit at tertiary hospital 255 patients suspected and/or confirmed for a COVID-19 disease were included. After admission, an eight-area pulmonary ultrasonography was performed and a LUS was standardized, which ranges from 0 to 24 points, depending on the pulmonary artifacts associated with the echocardiogram exam.

Results: There was a statistically significant difference between patients with positive PCR-RT related to factors: diabetes mellitus, active smoking, obesity and chronic renal failure. Regarding the need for supplemental oxygen support, a difference was observed between the use of an oxygen catheter in the PCR-RT negative group. The data obtained in our sample showed a low sensitivity and high specificity for SARS-CoV-2 allowing to exclude COVID-19 in relation to differentiating it from other causes of pulmonary infections. The characteristics of pulmonary artifacts help in more assertive screening and treatment, analyze the time of onset and likely case severities and multimodal support. There is a correlation between LUS and CT Chest in patients with suspected SARS-CoV-2 in the intensive care unit and a discriminative of 0.9 area under curve related to increased length of stay and mortality in LUS >8 (Figure 1).

Conclusion: The use of this tool can be implemented in resource-limited settings for screening on clinical suspicion of viral pneumonia.

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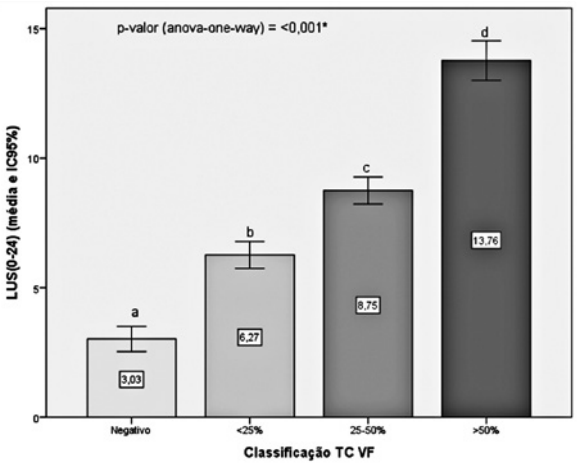

Figure 1. Cox regression for survival analysis related to Lung Ultrasound Score

Presentation Abstracts

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013

Prone position in patients with acute respiratory failure due to SARS-CoV-2

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Introduction: COVID-19 is an infection that can cause Acute Respiratory Distress Syndrome (ARDS).[1] Prone positioning in patients with ARDS has been shown to be beneficial in mechanically ventilated individuals.[2] However, the classification between responders and non-responders to the maneuver based on gas exchange, either by improving oxygenation or reducing PaCO2, does not predict mortality, but factors related to the reduction of lung injury related to mechanical ventilation have shown excellent results, with prone one of the ways to avoid large increases in pulmonary pressure.[3-5]

Objective: Thus, this study aims to verify changes related to the prone position in patients with COVID-19 with different degrees of pulmonary impairment.

Methods: Prospective cohort study in patients with COVID-19 under invasive respiratory support in the Intensive Care Unit (ICU). Patients with hemodynamic or spinal instability, facial or pelvic fractures, open or flail chest, delirium, confusion, inability to change position and pregnancy over 32 weeks were excluded from the study. Immediately before prone and 1 hour after the maneuver, arterial blood gases and ventilatory mechanics data were evaluated.

Results: A total of 249 individuals aged 58.2±13.7 years, 57% male and BMI of 29.1±8.1 kg/m2 were included. When comparing the SpO2/FiO2 and PaO2/FiO2 indices in supine and prone positions, there was an improvement. The paired difference of supine (115.6) *versus* prone (154.4) SpO2/FiO2 was 27.7, p<0.001, and the paired difference of supine (92.9) *versus* prone (131.7) PaO2/FiO2 was of 38, p <0.001. Patients in the prone position showed improvement in mean arterial pressure (MAP) values; Supine MAP was 80 mmHg and prone 83 mmHg, p<0.001. The in-hospital mortality of all patients submitted to the prone position was 59.8%, the better the SpO2/FiO2 and PaO2/FiO2 indices in the prone position, the lower the risk of death; on the other hand, the greater the age, the worse the prognosis, respectively OR=0.98 (95%CI:0.98-0.99) and OR 1.02 (95%CI:1.01-1.04).

Conclusion: The prone position in individuals with COVID-19 under invasive ventilatory support can improve oxygenation regardless of lung compliance, and patients who respond to the maneuver even with greater lung impairment have lower mortality.

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Presentation Abstracts

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014

Respiratory effort during pressure support variation in COVID-19 patients

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Introduction: The weaning phase in mechanically ventilated patients with COVID-19 seems to be difficult. Many patients seem to present an unappropriated muscular effort response to variation on pressure support (PS).[1,2] This fact can leads to lung injury.[3] requiring high sedative doses4 resulting in a difficult in weaning process and long mechanical ventilation length.

Objective: Assess the variation of respiratory muscular pressure during pressure support variation in COVID-19 patients.

Methods: This transversal study, approved by the institutional ethics committee, enrolled fifteen mechanically ventilated patients with ARDS due to COVID-19 during the weaning phase. The group was submitted to four levels of pressure support (15-10-5-0cmH2O). Respiratory muscular pressure was measured using esophageal balloon, considering Baydur maneuvers, the relation Esophageal Pressure (Pes)/ Air way occlusion pressure (Paw) were in an adequate range (0.8–1.2). The variation in esophageal pressure tracings were considered proportional to respiratory muscle effort. The values were obtained at 10 and 20 minutes from the start of each level of pressure support (4 steps). The tracings were analyzed with software LabVIEW. The measures of Pes were obtained from one minute mean cycle at 10 minutes from start of pressure support step and in the end of each pressure step. Two-way ANOVA test repeated measures was performed using GraphPad Prism version 8.0.1 for windows. P values <0.05 was considered statistically significant.

Results: Fifteen patients tracings were analyzed during mechanical ventilation weaning phase, at total 120 measures were performed. The mean values of Delta Pes were inversely proportional to PS decrease. Delta Pes mean with PS15 was 5.67, PS10 5.70, PS5 8.94 and PS0 10.58cmH2O (Figure 1). Two Way ANOVA ($p<0.0001$).

Conclusion: A good bed-side evaluation is essential to guide the mechanical ventilation settings during weaning phase. The adequation and vigilance of PS level is crucial to avoid over or under assistance, that can lead to poor outcomes.

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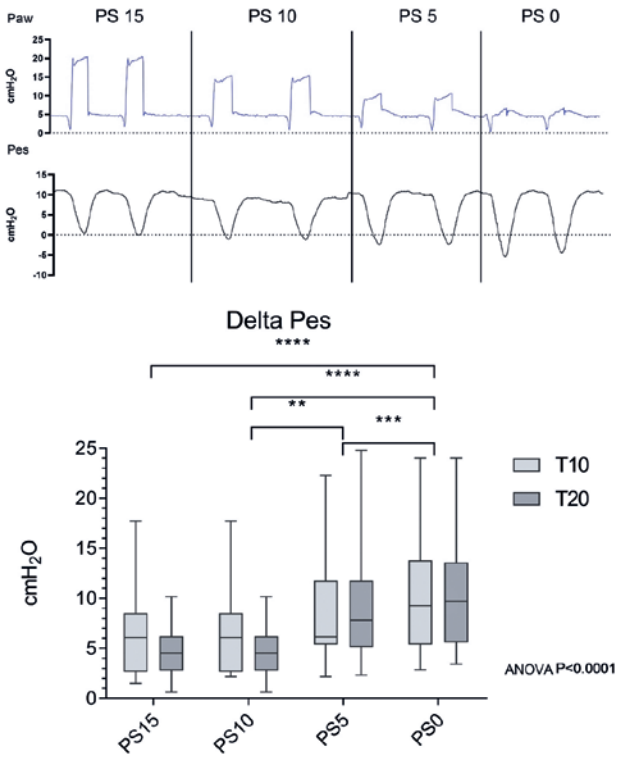

Figure 1. Top: Example of tracing analysis (airway pressure and esophageal pressure. Bottom: Boxplot of the values of esophageal pressure variation accordingly to each pressure support step

Presentation Abstracts

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015

The use of non-invasive mechanical ventilation in patients with COVID-19: an integrative review

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Introduction: COVID-19 has affected thousands of people and was declared a pandemic by the World Health Organization in March 2020. One of the most affected organs is the lung, and the inflammatory process caused by the SARS-CoV-2 virus can impair gas exchange, resulting in acute hypoxemic respiratory failure and, in some cases, Acute Respiratory Distress Syndrome (ARDS).[1,2] Non-invasive mechanical ventilation (NIV) has assisted in the treatment of some patients with the SARS-CoV-2 virus. [3] This therapy provides positive pressure ventilation and helps normalize lung volumes, improve respiratory muscle function and lung mechanics, as well as attenuate hypoxemia.

Objective: To analyze the effectiveness of non-invasive mechanical ventilation in hypoxemic patients affected by COVID-19 in the existing literature.

Methods: Integrative review study through article searches in the databases SciELO, PubMed, Embase, and Bireme in June and July 2021. A total of 224 articles were pre-selected based on title and abstract. Among these, 40 were selected for subsequent full-text reading (Figure 1).

Results: Thirteen articles met the inclusion criteria. Of these, 12 mention the success rate of NIV therapy, which ranges from 24.3% to 72.1%. The lowest success rate was reported in Italy during the initial period of the pandemic, at a time of limited understanding of the disease, high demand, and scarce resources. Eight studies (66.6%) reported a NIV success rate greater than or equal to 50%. A limitation observed in the vast majority of the studies is the retrospective observational design. Furthermore, only 3 articles presented a multicenter dimension with distinct populations. Given the variety of techniques, interfaces, and parameters used, success or failure rates may differ in other contexts, experiences, or populations. Heterogeneity was found in the therapeutic management among institutions and a lack of beds or resources. Selected cohorts of patients, usually more severe cases, may have contributed to some degree of bias in outcome associations, as well as the absence of control groups, which prevents a reliable comparison of NIV effectiveness with other ventilatory modalities.

Conclusion: The use of NIV as an initial strategy in COVID-19 patients requiring ventilatory support is associated with symptom improvement and survival in a similar proportion of patients. Therapeutic efficacy was observed in approximately half of the cases, which did not progress to invasive ventilation or death. However, bedside monitoring is essential to identify patients at high risk of failure and determine the need for invasive support at the appropriate time. Further randomized clinical trials are needed to determine the most appropriate use of NIV in this patient context.

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CAAE: Not applicable.

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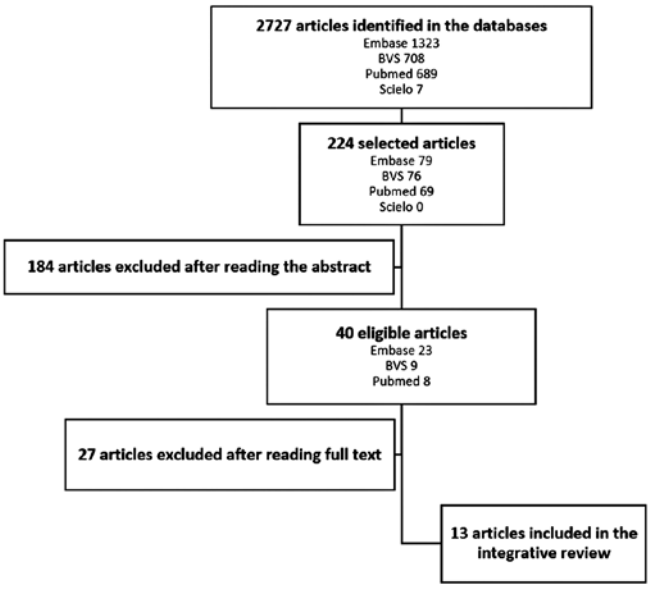

Figure 1. Flowchart of study selection in databases

Presentation Abstracts

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016

Understanding the interaction between respiratory muscle effort and assisted proportional ventilation plus in a mechanical simulator

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Introduction: In assisted mechanical ventilation, the work of breathing (WOB) should be shared by patient and ventilator.[1,2] In PAV+, there is an association between respiratory muscle pressure and the pressure generated by the ventilator.[1,3,4] There are still knowledge deficits about the influence of different types of inspiratory efforts on mechanical ventilator outputs during PAV+ assistance.

Objective: To evaluate how the interaction between different inspiratory effort (-3, -7 and -11cmH2O) and inspiratory delay (5%, 10% and 15%) behaves in the PAV+ ventilation mode coupled to a mechanical simulator (compliance of 100mL/cmH2O and resistance of 10cmH2O/L/sec), analyzing the response variables inspiratory time (IT), expiratory tidal volume (ETV), peak inspiratory flow (PIF) and peak pressure (PP). Check the difference in behavior between the PAV+ mode and the PSV mode using the same effort combinations and the same response variables.

Methods: The simulator was coupled to the mechanical respirator and the experiment started with the sequential recording (script) of three different inspiratory effort (-3, -7, -1cmH2O) and three different delays (5%, 15% and 20%) (Figure 1) pre-programmed in the ASL5000 simulator software, totaling 9 combinations of inspiratory efforts. For each of the 19 levels of assist and 16 PSV values, the effort and delay were combined. Response variables were collected from the ASL5000_SW software.

Results: In PAV+ mode, a significant variation was found in the comparison of inspiratory effort, delay and levels of assist, with ascending values of the response variables in the combination of the three factors and separately. The effort out over delay in the variation of variables, and its increase was amplified with changes in the levels of assist. We observed an increase in ETV (Figure 2) with the use of a greater inspiratory delay, and the increase of PP (Figure 3) with inspiratory delay occurred mainly from medians e higher level of assist (remained within safe values). In PSV mode, lost effort was found in combinations with the effort of -3cmH_2O, from the PSV of 6 cmH2O, and in the effort of -7cmH_2O, from the PSV of 17cmH_2O. In these situations of undetected efforts, there was an increase in ETV and IT (Figure 4) with the use of a lower effort. The change in the response variables was more related to the change in PSV than to the inspiratory effort and delay.

Conclusion: PAV+ responded promptly to variations in effort and delay, with a proportional increase in terms of response variables. It was possible to increase the ETV with the use of a greater inspiratory delay, keeping the PP at safe values for clinical use. The response of the variables studied in PSV, in the face of variations in effort, did not fluctuate in an effort-dependent manner, as occurred in PAV+. PAV+ seems to provide adequate ventilatory assistance with the normal inspiratory variability of each patient.

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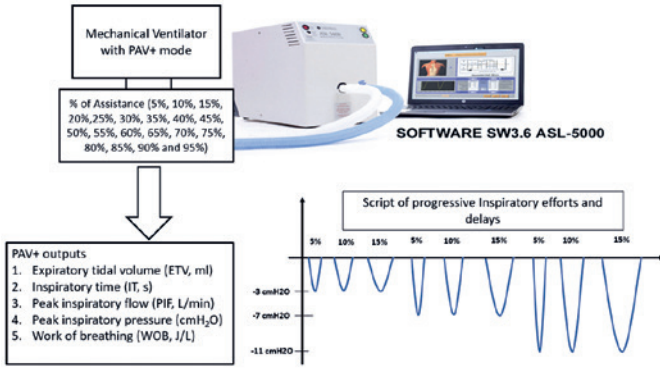

Figure 1. Script of the sequence of inspiratory effort (-3, -7, -11 cmH_2O) and inspiratory delay (5, 10, 15%)

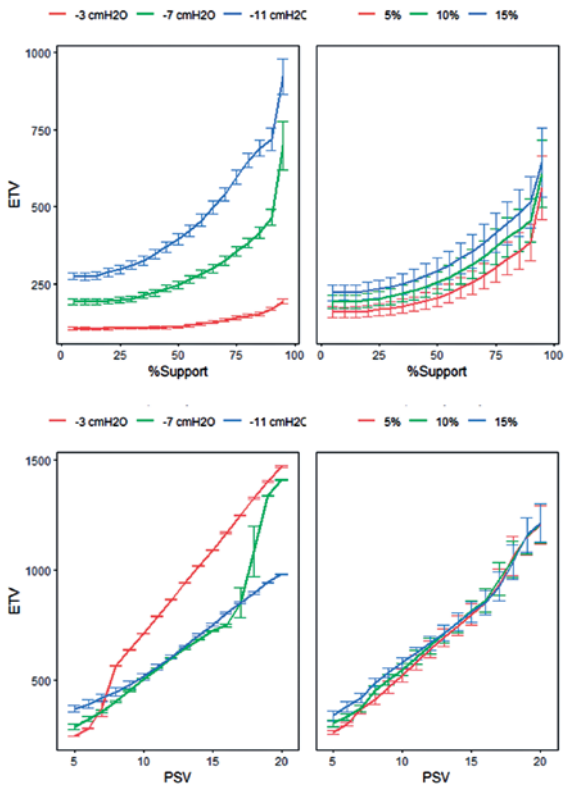

Figure 2. ETV average profiles by value of PSV and PAV+ ventilation modes in each inspiratory effort (-3, -7, -11 cmH_2O) and inspiratory delay (5, 10, 15%)

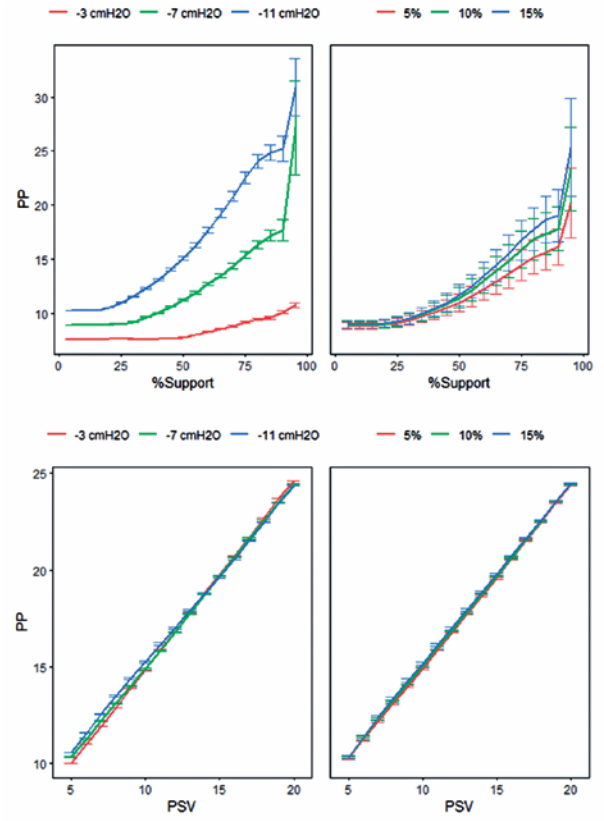

Figure 3. PP average profiles by value of PSV and PAV+ ventilation modes in each inspiratory effort (-3, -7, -11 cmH_2O) and inspiratory delay (5, 10, 15%)

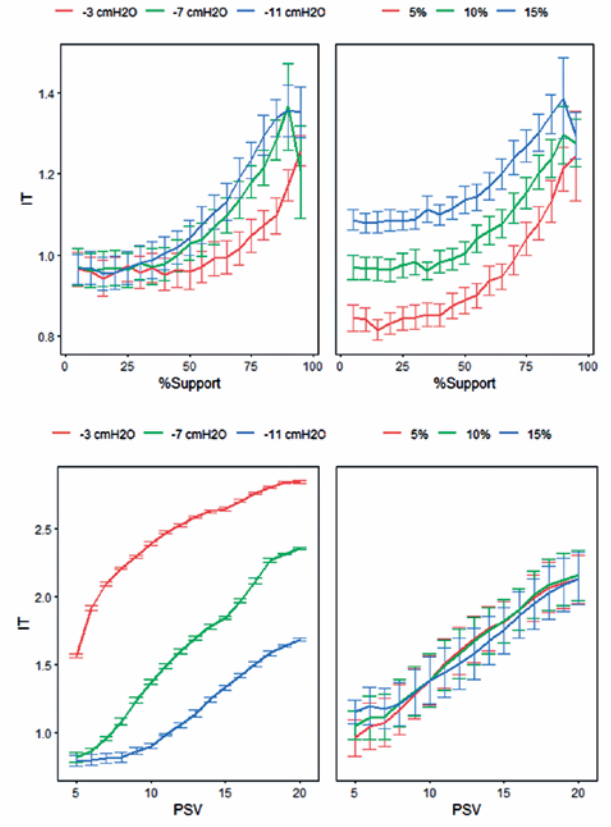

Figure 4. IT average profiles by value of PSV and PAV+ ventilation modes in each inspiratory effort (-3, -7, -11 cmH_2O) and inspiratory delay (5, 10, 15%)

Presentation Abstracts

CONTENTS

017

Tetraplegy due to intermittent acute porphyria: the role of physiotherapy in the rehabilitation process – a case report

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Introduction: Acute Intermittent Porphyria (AIP) is one subtype, out of eight, that encompasses the porphyria. Each subtype is secondary to a defect in the pathway of Heme synthesis. AIP is an autosomal-dominant disease, manifested in less than 10% of individuals with the mutation. The clinical presentation varies, and involves a range of symptoms from abdominal pain to important muscular paralysis, with acute depreciation of motor and respiratory functions needing mechanical ventilation and intensive care.[1,2] In this scenario, early mobilization and progressive mobility program is an important intervention aiming to improve the functionality and regaining respiratory capacity.[3,4]

Objective: Report the case of a 38 years old woman, admitted in the Intensive Care Unit (ICU) with decline of respiratory and motor functions, due to the manifestation of AIP. In which, it was possible to optimize the rehabilitation through a progressive mobility program. The study is a case report based on the data obtained through the electronic patient record, evaluations and daily follow-up. It was obtained the Patient Consent for Publication, following the institution regulation.

Case report: Patient feminine, 38 years old with no previous comorbidities and admitted with epigastric pain, progressing in to tetraparesis with braquial and proximal predomination, and respiratory compromise, needing mechanical ventilation. After 5 days intubated, tracheostomy was conducted. The identification of patient's mobility status followed the institution's early mobilization protocol and rehabilitation program was aligned with the medical team. An individualized physiotherapy sessions sheet was developed, prioritizing the weaning ventilation support and motor functionality. The session's plan was reviewed or reformulated weekly based on the periodic evaluation of motor and respiratory functions. During the ICU stay, there was a decrease in the muscle mass, in contrast with progressive improvement of mobility and vital capacity (Figure 1). The weaning of mechanical ventilation and regaining respiratory autonomy was done applying diaphragm electrical stimulation, simultaneously to periods of pressure support ventilation. Evolving to sessions with inspiratory muscle training devices. In the motor rehabilitation branch, the emphasis was neuromuscular electrical stimulation of limbs, tilt table, cycle ergometer and kinesiotherapy progressing from passive, in early stages, progressing to active during ICU stay.

Conclusion: This case report brings to light the importance of individualized and progressive mobility program

in critically ill patients, demonstrating that it may be a key point to obtaining satisfactory improvement in functionality and respiratory capacity.

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Figure 1. Measures of Vital Capacity (VC) and *PERME Score* during ICU length of stay

Presentation Abstracts

CONTENTS

018

Association between delta anion gap/delta bicarbonate and outcome of surgical patients admitted to intensive care

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Introduction: There is an expected relationship between Anion Gap (AG) elevation and serum bicarbonate variation (deltaBic).[1] Thus, we can assess whether there are other associated metabolic disorders by calculating deltaAG/deltaBic.[1] Altered values can indicate early on whether there are other associated disorders and suggest possible etiologies with more accuracy and appropriate care.[2]

Objective: We aimed to characterize the metabolic acidosis and its associations in surgical patients with possible complications related to this problem.

Methods: Involved patients in the postoperative period in 3 Intensive Care Units (ICUs) of tertiary hospitals and evaluated laboratory tests on admission and after 24h. Patients with different metabolic acidosis disorders and the deltaAG/deltaBic ratio were compared with each other regarding ICU complications and 30-day mortality. To patients with metabolic acidosis and elevated AG after 24h the deltaAG/deltaBic ratio was applied and separated into 3 groups: metabolic acidosis with elevated AG without associated disorders, metabolic acidosis with elevated AG associated with hyperchloremia and metabolic acidosis with elevated AG associated with alkalosis.

Results: We evaluated 621 surgical patients admitted to ICU, with 321 (51.7%) with some type of acidosis. After 24 hours, 140 patients remained with metabolic acidosis with elevated AG. These 140 patients were submitted to deltaAG/deltaBic calculation, and separated into 3 groups: first group with 101 patients and deltaAG/deltaBic association <1.0 (associated hyperchloremia), second with 18 patients and deltaAG/deltaBic of 1.0 to 1.6 (no mixed disorder), and the group with deltaAG/deltaBic >1.6 (associated with alkalosis) with 21 patients. In patients with metabolic acidosis with elevated AG without associated disorders there was a higher proportion of cardiovascular complications (p=0.001) compared to patients with mixed disorders. In addition, the mortality of patients with deltaAG/deltaBic between 1 - 1.6 was the highest (44.4%) of the groups evaluated.

Conclusion: deltaAG/deltaBic is useful to evaluate possible mixed disorders of metabolic acidosis with increased AG.

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019

Prognosis of surgical oncology patients during the COVID-19 pandemic in Brazil: the coronal study

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Introduction: The impact of COVID-19 on post-operative recovery from cancer surgeries, which most times cannot wait, needs to be understood to inform sound clinical decision- making during and after any pandemics.[1,2]

Objective: The aim of this study was to define the impact on 28-day mortality and morbidity of surgical oncology patients during the COVID-19 pandemic.

Methods: Cohort study carried out before and during the onset of the COVID-19 pandemic in 2020, observational, multicenter, which consisted of determining the risks to oncological surgical patients admitted to Intensive Care Units (ICU) in the postoperative period in 3 institutions specialized in the treatment of cancer. Oncological surgical patients consecutively admitted to the ICUs from March to June 2019 (first phase) and from March to June 2020 (second phase) were evaluated. In the first phase proposed in the study, there were still no cases of COVID-19 and in the second phase the pandemic was in the initial stages. On the 28th day, a survival analysis was performed as the primary outcome. As a secondary outcome, the patients were followed during their ICU stay for a maximum of 7 days to determine organ dysfunction (SOFA score) and clinical-surgical complications. Multivariate analysis was provided due to possible imbalances between groups.

Results: During the study periods 328 patients were screened, however 291 patients were included, with 160 patients in 2019 and 131 in 2020. Overall age was 60.8±14.5 years old and 52.3% were female. The SAPS 3 score was 43.6±12.4. All baseline characteristics were well balanced between the two periods. Furthermore, the type of anesthesia and surgeries, intraoperative care and intraoperative complications did not show statistically significant differences between the studied groups. The overall mortality rates were 3.1% in the ICU and 10.4% in the hospital. However, comparing the periods, there were higher occurrences of mortality in the ICU and hospital in 2020. When adjusting the data for risk variables, respiratory complications and pulmonary infection remained higher in 2020, on the other hand the rates of other types of infections were

lower in 2020 (odds ratio 0.78; 95%CI:0.67-0.91). Evaluating the risk ratio for 28-day survival in the COX model adjusted for risk variables between the periods of 2019 and 2020, HR= 4.35 (95%CI:2.15 – 8.82) was found for patients in the period from 2020.

Conclusion: Patients who underwent oncological surgeries and were referred to the ICU had a higher risk of death in the 28-day follow-up during the period of the COVID 19 pandemic. In addition, they are more likely to have respiratory complications and lung infections.

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020

Dilemmas and possibilities in the development of Science of Improvement projects involving the use of Artificial Intelligence in Healthcare

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Introduction: In recent years, there has been great interest in Artificial Intelligence (AI) applications in healthcare. However, the issues related to AI's implementation, ethical use, and safety are not consensual and have not yet been adequately addressed.(1)

Objective: Report the experience of the Einstein Network for Critically Ill Patients, focusing on the dilemmas and possible paths for the use of Science of Improvement (SI) tools in the study of potential applications of AI in healthcare (specifically, in the management of severe patients or those at risk of clinical deterioration).

Methods: Report of the experience and presentation of insights based on a prospective observational study (Proof of Concept) conducted from February 2022 to June 2023 in the Semi-Intensive Unit of the *Hospital Israelita Albert Einstein Hospital* (HIAE), as part of the Improvement Advisor Course from the Institute for Healthcare Improvement (IHI).

Results: In phase 1, data was collected from the monitoring center, while in parallel, an AI algorithm, previously trained with retrospective data, was also fed (without contact with the healthcare team). After assessing the non- inferiority of the algorithm compared to the monitoring center, phase 2 (POC), which involved creating a user interface for physicians and actual use, was authorized.

Considering the Improvement Model (IM) of IHI aims to bring established evidence to clinical practice, it could seem inappropriate to be used with AI for early detection of clinical deterioration in a Semi-Intensive Unit due to the lack of scientific evidence. This report is based on international guidelines for evaluating AI solutions in healthcare1. The rational and ethical incorporation of AI in healthcare should follow similar stages as those for new medications in Phase I, II, and III studies. The proposed rationale for using the IM to support the early validation of AI on a small scale, should focus on three key areas.

I. Adoption
II. Patient safety
III. User experience
IV. Patient safety is the most important factor among the three, following the established framework for Phase I studies and adhering to the Bioethical principle of Non-Maleficence. Various variables were carefully selected to ensure balance and optimize processes. Since it was a quality improvement project, no specific protocols were recommended to the physicians.

Tools and concepts like Psychology of Change, Process Mapping, Value Stream Mapping, early involvement of frontline "Gemba" visits, and the Plan-Do-Study-Act (PDSA) cycles were valuable in guiding initial AI tests. Exploring more specific techniques for Quality Improvement Through Planned Experimentation in the future could be beneficial.[2]

Conclusion: The experience report showed that using SI tools in a project integrating AI to redesign an early detection process for clinical deterioration in the Semi-Intensive Unit is feasible and beneficial.

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021

Management of nursing knowledge in safe handling of critically ill patients on mechanical ventilation

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Introduction: Mechanical Ventilation (MV) is a fundamental clinical support for maintaining life in severe clinical conditions of respiratory failure.(1) Therefore, the management of critical patients on MV by the nurse, a member of the multidisciplinary team, is extremely important for achieving the therapeutic goal in the prevention of adverse and infectious events, especially when guided by up-to-date technical-scientific knowledge, resulting in care management based on the best care practices. (2-3) In addition, the bedside clinical discussion between professionals and residents allows the enhancement of clinical practice and the operationalization of interdisciplinarity.(2-3)

Objective: To map nurses' knowledge in the management of patients with acute respiratory failure on mechanical ventilation.

Methods: This is a cross-sectional, descriptive study of quantitative approach, developed in the intensive care units of a public university hospital in Rio de Janeiro, through a structured questionnaire, with the Management System Epimed Monitor UTI. Data analysis was performed using descriptive statistics. The research was approved by the Research Ethics Committee with protocol number 4.221.262.

Results: Study carried out in three intensive care units totaling 27 beds, 42.23% of patients mechanically ventilated, mean duration of MV of 12.24 days, SAPS 3 (62 points), and standardized mortality rate of 1.69 of patients, with very high severity. A total of 47 nurses participated in the study, including 7 second-year residents. There was a greater distribution of nurses (76.6%), with professional practice time in the ICU between 2 and 5 years (53.4%), and 70% having completed the mechanical ventilation course. Regarding device assembly and checking and provision of suitable materials for installation, 76.6% answered correctly, emphasizing the importance of checking device and basic ventilation equipment functioning to ensure protective ventilation. Concerning the measures to prevent MV-associated pneumonia, 93% answered the items correctly; however, as for the periodicity of hygiene, 66.7% of the professionals answered inadequately, demonstrating that there are still gaps related to the performance of oral hygiene and the occurrence of infection. With respect to identifying asynchronies and the need for lower airway aspiration based on the ventilatory variables, 60% of the nurses answered adequately. It should be noted that the study site is a university hospital, with one of the largest residency programs in nursing and physiotherapy in the national scenario, stimulating the exchange of theoretical and practical knowledge among the teams.

Conclusion: The findings of this study suggest strengthening of the nursing teams' knowledge about

ventilatory management of critical patients and the importance of promoting clinical discussions at the bedside, resulting in the consolidation of knowledge management for multidisciplinary teams.

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022

Paving the way to Precision Medicine in ICU: Biobank integration with OMOP-CDM. Challenges, opportunities, and insights from *Hospital Israelita Albert Einstein, Brazil*

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Introduction: Integration of biobank information into the OMOP Common Data Model (CDM) presents both opportunities and challenges in the field of healthcare data management. However, the process of mapping biobank information to the OMOP CDM poses various challenges, including data harmonization, standardization of terminologies, ensuring data quality, and addressing privacy and ethical considerations.[1]

Objective: To demonstrate the challenges encountered in mapping the biobank patients of *Hospital Israelita Albert Einstein* (HIAE) to the OMOP CDM, as well as the opportunities and insights that arised in the context of critically ill patients.

Methods: Qualitative and descriptive study (Conversion to CDM uses SQL and Python scripts). The study utilizes SQL and Python for data mapping and employs Extract, Transform, and Load (ETL) processes. The OHDSI Atlas tool is utilized to visualize mapped data and create cohorts. The Impala engine is used to retrieve data from files stored in Hadoop Distributed File System in OMOP CDM format.

Results: The architecture of the HIAE OMOP Biobank is built upon a local Hadoop cluster boasting a total of 168 cores, 655 GB of memory, and 32.4 TB of storage. This cluster is shared with additional applications and can be accessed through Impala or Spark. Currently, a total of 4,788 biobank patients have been successfully mapped (Figure 1), with their information spread across 11 OMOP-CDM Domain tables, resulting in a grand total of 35.093.493 records and 5,942 unique terms. Of those, 186 patients are critically ill and 2,790 samples of them are stored. By aligning biobank data with the standardized structure of the OMOP-CDM, researchers and healthcare providers can leverage the vast potential of biobank resources for real-world evidence generation, observational research, and personalized medicine. Precision medicine-based interventions could be proposed and tested in clinical trials, using this structure, in near future, in a scenario in ICUs of many negative/neutral trials and generic diagnosis (syndromes).[2] The project encountered several challenges, some of which are commonly faced by projects adopting this model. These challenges include a shortage of experienced teams knowledgeable in

OMOP, the requirement for specialized computational resources, the need for ETL work, and the integration of diverse databases.[1,3] However, working with genetic data introduces additional complexities. The standard OMOP-CDM certification is still being developed for genetic data, resulting in a lack of appropriate concepts for detailed mapping of information.[2]

Conclusion: The initial experience on integrating biobank data and OMOP-CDM in HIAE here reported is believed to be the way to launch the conditions to bring precision to the ICU. Allowing collaborative research using this infrastructure created can support Intensive Care Medicine to overcome the challenge of treating complex and almost unique patients.

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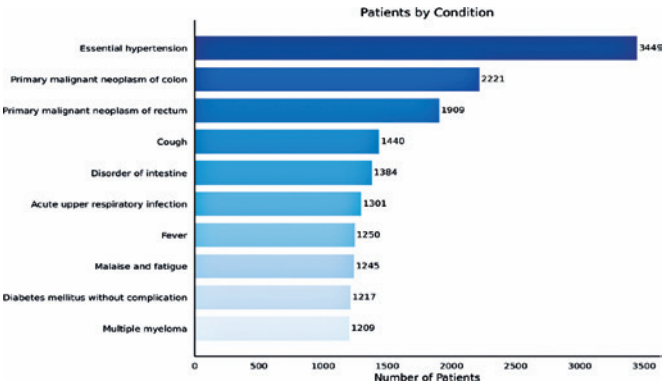

Figure 1. Biobank patients grouped by condition

023

Quick sepsis-related organ failure assessment in identifying clinical deterioration in patients with COVID-19

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Introduction: On March 11, 2020, the WHO characterized COVID-19 as a pandemic.(1) Since then, emergency services have played a crucial role in the care network for these patients.(2) The increased demand in emergency services has led these environments to become not only stabilization units but also admission units for patients awaiting ward or ICU beds.(3) As a result, recurrent assessments of the patient's clinical condition have become essential to meet treatment needs safely in an overcrowded setting. With the aim of intervening quickly and systematically, systems for the early detection of clinical deterioration have been created.(4)

Objective: To evaluate the performance of the quick Sepsis-related Organ Failure Assessment (qSOFA) in the early identification of clinical deterioration in patients with COVID-19.

Methods: A retrospective cohort study conducted in a private emergency service involving patients with COVID-19. qSOFA was calculated upon admission and prior to clinical deterioration. Clinical deteriorations including changes in consciousness level, acute respiratory failure, shock, and cardiopulmonary arrest were identified in the patients' electronic medical records, as well as outcomes such as discharge, ward admission, step-down unit admission, intensive care unit (ICU) admission, and death.

Results: A total of 813 patients with a mean age of 69 years and male prevalence (61.5%) were included. Cough (56.2%) and fever (42.8%) were the most reported signs and symptoms, and the majority of patients were classified as ESI 3 (58.8%). There were 187 clinical deteriorations within the first 24 hours after admission to the emergency service; 553 (68%) were discharged; and 98 (12.1%) were admitted to the step-down unit. The evaluated score showed a specificity of 98.0% and low sensitivity. qSOFA>2, prior to clinical deterioration, was associated with the occurrence of clinical deteriorations, higher frequency of step-down unit admission, and death.

Conclusion: qSOFA was associated with the occurrence of clinical deterioration when positive. It demonstrated low sensitivity and high specificity, justifying that this instrument should not be the sole clinical deterioration screening tool, but rather an auxiliary score in the early identification of clinical deterioration in patients with COVID-19 in the emergency service.

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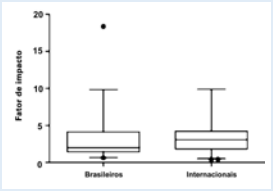
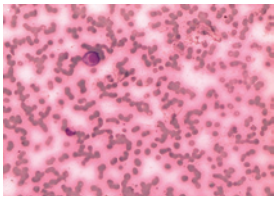
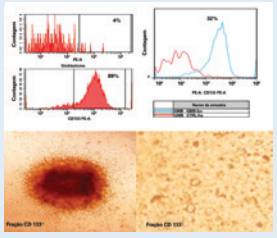
Line art	An image composed of lines and text, which contains no tonal or shaded areas		tif or eps	Monochrome 1 bit or RGB	900 to 1,200 dpi
Halftone	A continuous tone photograph containing no text		tif	RGB or Grayscale	300 dpi
Combo	Image contains halftone plus text or line art elements		tif or eps	RGB or Grayscale	500 to 900 dpi

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