UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Using Ecmo in Emergency Department

2425-3-I0101D143

Aims

The course aims to develop in the students of the nursing degree course the knowledge regarding the use of Ecmo Veno-Arterioso support in intra and extra-hospital emergencies.
Specifically, the course aims to:
• Deepen knowledge on the main indications to the positioning of an ecmo veno-arterious support
• Recognize the main nursing diagnoses, interventions and outcomes in the person undergoing veno-arterial ecmo
• Know the organization of the team mutlidisciplinare in taking charge of the person in ecmo veno-arterioso

Contents

Historical background and definition of ecmo support
• Basic ecmo v-a physiology, clinical indications, inclusion criteria
• Main complications
• Taking charge of the supporting person
• Activation, protocols and team work
• State of the art and research, ethical considerations

Detailed program

Knowledge of the main indications and contraindications to the positioning of an ECMO V-A support

• Basic physiology of ECMO V-A, clinical indications, inclusion criteria

• ECMO V-A operating techniques

• Exposure of a clinical case of ECMO V-A positioning in emergency

• Patient Management in ECMO V-A: Nursing, monitoring, transport and complications

• Weaning from ECMO V-A or bridge to VAD/transplantation

• State of the art and research, ethical considerations

Prerequisites

Enrolment in the third year of Degree in Nursing

Teaching form

The lesson takes place in the dispensing mode in presence through frontal lesson and guided discussion.

Textbook and teaching resource

Richardson, A. S. C., Tonna, J. E., Nanjayya, V., Nixon, P., Abrams, D. C., Raman, L., Bernard, S., Finney, S. J., Grunau, B., Youngquist, S. T., McKellar, S. H., Shinar, Z., Bartos, J. A., Becker, L. B., Yannopoulos, D., B?elohlávek, J., Lamhaut, L., & Pellegrino, V. (2021). Extracorporeal Cardiopulmonary Resuscitation in Adults. Interim Guideline Consensus Statement From the Extracorporeal Life Support Organization. ASAIO journal (American Society for Artificial Internal Organs : 1992), 67(3), 221–228.

Ubben, J. F. H., Heuts, S., Delnoij, T. S. R., Suverein, M. M., van de Koolwijk, A. F., van der Horst, I. C. C., Maessen, J. G., Bartos, J., Kavalkova, P., Rob, D., Yannopoulos, D., B?lohlávek, J., Lorusso, R., & van de Poll, M. C. G. (2023). Extracorporeal cardiopulmonary resuscitation for refractory OHCA: lessons from three randomized controlled trials-the trialists' view. European heart journal. Acute cardiovascular care, 12(8), 540–547.

Rao, P., Khalpey, Z., Smith, R., Burkhoff, D., & Kociol, R. D. (2018). Venoarterial Extracorporeal Membrane Oxygenation for Cardiogenic Shock and Cardiac Arrest. Circulation. Heart failure, 11(9), e004905.

Panchal, A. R., Bartos, J. A., Cabañas, J. G., Donnino, M. W., Drennan, I. R., Hirsch, K. G., Kudenchuk, P. J., Kurz, M. C., Lavonas, E. J., Morley, P. T., O'Neil, B. J., Peberdy, M. A., Rittenberger, J. C., Rodriguez, A. J., Sawyer, K. N., Berg, K. M., & Adult Basic and Advanced Life Support Writing Group (2020). Part 3: Adult Basic and Advanced Life Support: 2020 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation, 142(16_suppl_2), S366–S468.

Lorusso, R., Shekar, K., MacLaren, G., Schmidt, M., Pellegrino, V., Meyns, B., Haft, J., Vercaemst, L., Pappalardo, F., Bermudez, C., Belohlavek, J., Hou, X., Boeken, U., Castillo, R., Donker, D. W., Abrams, D., Ranucci, M., Hryniewicz, K., Chavez, I., Chen, Y. S., … Whitman, G. (2021). ELSO Interim Guidelines for Venoarterial Extracorporeal Membrane Oxygenation in Adult Cardiac Patients. ASAIO journal (American Society for Artificial Internal Organs : 1992), 67(8), 827–844.

Belohlavek, J., Smalcova, J., Rob, D., Franek, O., Smid, O., Pokorna, M., Horák, J., Mrazek, V., Kovarnik, T., Zemanek, D., Kral, A., Havranek, S., Kavalkova, P., Kompelentova, L., Tomková, H., Mejstrik, A., Valasek, J.,

Peran, D., Pekara, J., Rulisek, J., … Prague OHCA Study Group (2022). Effect of Intra-arrest Transport, Extracorporeal Cardiopulmonary Resuscitation, and Immediate Invasive Assessment and Treatment on Functional Neurologic Outcome in Refractory Out-of-Hospital Cardiac Arrest: A Randomized Clinical Trial. JAMA, 327(8), 737–747.

Abrams, D., Garan, A. R., Abdelbary, A., Bacchetta, M., Bartlett, R. H., Beck, J., Belohlavek, J., Chen, Y. S., Fan, E., Ferguson, N. D., Fowles, J. A., Fraser, J., Gong, M., Hassan, I. F., Hodgson, C., Hou, X., Hryniewicz, K., Ichiba, S., Jakobleff, W. A., Lorusso, R., … International ECMO Network (ECMONet) and The Extracorporeal Life Support Organization (ELSO) (2018). Position paper for the organization of ECMO programs for cardiac failure in adults. Intensive care medicine, 44(6), 717–729.

Semester

Second semester

Assessment method

Frequency

Office hours

By appointment

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION