What is ALS-compliant PoCUS, mCPR, eCPR?

Introducing ALS-EP: A novel training concept for experienced Advanced Life Support providers

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INTRODUCTION

The current Advanced-Life-Support, ALS-provider course of the European Resuscitation Council (ERC) offers a certified qualification for physicians, nurses and emergency medical services providing resuscitation for in-hospital- (IHCA) and out-of-hospital cardiac arrest (OHCA) patients.

During last few years, novel diagnostic and therapeutic options have become available. These are Point-of-Care Ultrasound (PoCUS), mechanical cardiopulmonary resuscitation (mCPR), and extracorporeal CPR (eCPR) devices e.g. However, these techniques are not part of practical training scenarios within current ERC ALS provider courses. Goal: To develop an ALS Experienced Provider (ALS-EP) course format which incorporates these techniques and addresses ALS-conformed integration into the resuscitation process..

METHODS

Based on current guideline recommendations on PoCUS, mCPR and eCPR during CPR, literature was screened for new publications, and excerpts formed a draft for ALS-EP. Furthermore, Simulated scenarios were analyzed.

Lectures

- ALS-compliant integration of ultrasound, mechanical CPR und eCPR into an Advanced Life Support Scenario
- Human Factors and Non-Technical Skills during CPR
- eCPR: Indication, benefits and limitations

Skills

- Handling of mechanical CPR devices
- Resuscitation Ultrasound
- Ultrasound Guided Vascular Access

Workshops

- Technical aspects of eCPR
- Case Based Learning

CASTeach

- ALS Simulation with Resuscitation Ultrasound & mCPR
- Decision making in refractory cardiac arrest
- eCPR Scenario
- Targeted eCPR & Organoprotection

RESULTS

According to Consensus on Science and Treatment Recommendations, above mentioned tools are part of current universal ALS-algorithm. Results of the literature review led to a specific skill-oriented, scenario-based course format with a focus on procedural aspects and Crew Resource Management. Topics addressed therein are e.g. targeted CPR, resuscitation ultrasound modalities, eCPR background and procedural requirements. Skills stations comprise e.g.: handling of mCPR devices, resuscitation ultrasound: cardiac views. In simulated scenarios, time critical use of mCPR and resuscitation ultrasound while minimizing interruptions, as well as team coordination for eCPR are trained. Specific simulation technology is required.

CONCLUSION

The design of a new ALS-EP Provider course contains a format directed at experts in prehospital as well as in-hospital resuscitation services with a contact to eCPR. The 1.5 day-program addresses PoCUS, mCPR and eCPR especially in the context of an ongoing CPR process. A course manual will be available.