Implementation of neonatal simulation-based education at the Medical University of Graz

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Introduction: Medical simulation, defined as a situation or environment that allows students and medical staff to experience, practice, learn, evaluate, test and understand life-saving procedures, has been widely implemented into under- and postgraduate medical education within the past decades [1]. Simulation-based medical education (SBME) may consist of computer-based virtual reality, part-task-trainers for the training of technical skills, static manikins, and high-fidelity integrated patient simulators [2]. An elective simulation-based course has been introduced at the Department of Pediatrics at the Medical University of Graz to improve skills and expertise in neonatal resuscitation.

Methods: An interdisciplinary work group, established in January 2013, has designed the course. Teaching contents, course time, and educational objectives have been defined and coordinated with current pediatric courses.

Results: The presented elective course has started as pilot project in autumn 2013. The number of participants has been limited to guarantee hands-on training for every student. Students learn structured assessment and resuscitation of newborns and common neonatal diseases (e.g. transitory tachypnea of the infant, wet lung, bacterial infection, hypoglycemic seizure, meconium aspiration syndrome). After theoretical introduction (lecture/oral presentations) on neonatal assessment, resuscitation and diseases, and active training of resuscitation algorithms on low-fidelity manikins students familiarize with a high-fidelity infant simulator. Subsequently, students actively train practical skills and participate in simulated clinical scenarios with video-assisted debriefings.

Conclusion: Neonatal SBME with low- and high-fidelity simulators has been implemented as pilot project in the pediatric curriculum of the Medical University of Graz. The impact of the described course will be determined through objective assessment of cognitive and technical skills. If SBME results in significant improvement of cognitive and technical skills, this educational pilot project should be established for all medical students.

References: