Quality of CPR during in-hospital resuscitation with real-time audiovisual feedback

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Purpose of the study

Quality of chest compressions in resuscitation of in-hospital cardiac arrest (IHCA) victims is often suboptimal. Quality can be assessed by measuring the time without compressions (i.e. no-flow time), rate and depth of compressions and compression and release fractions. Use of a cardiopulmonary resuscitation (CPR) feedback device during resuscitation has been associated with better performance and patient survival. The Kuopio University Hospital (KUH) resuscitation team started using CPR feedback in 2013. We aimed to evaluate the quality of CPR.

Materials and methods

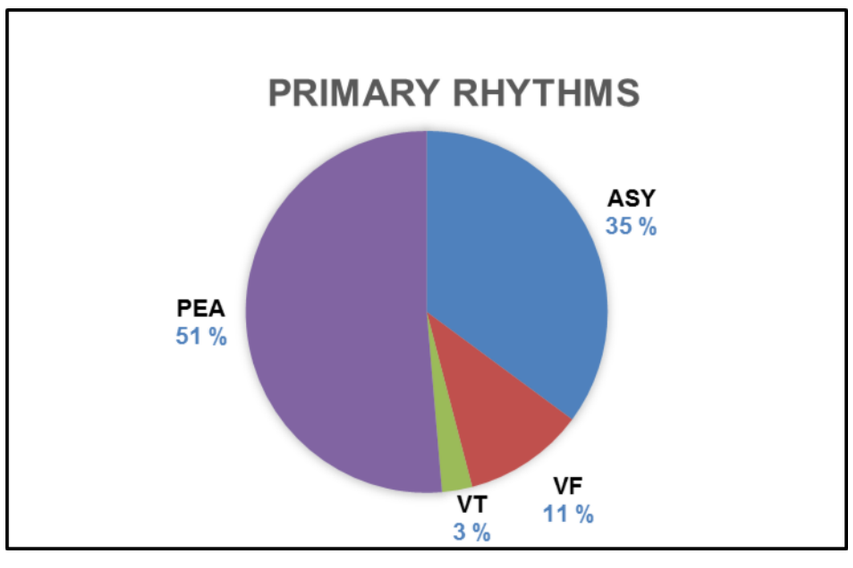
We analysed data from 74 resuscitations performed by KUH ICU resuscitation team during 2013-2016. Quality of CPR was recorded with Zoll X®-defibrillator (Zoll® Medical Corp, USA) using real time recording during resuscitation. The analyses were done with Zoll RescueNet Code Review program (Zoll® Medical Corp, USA). We analysed only those resuscitations for which we had data for over 40 seconds. We focused on the first 10 minutes of the resuscitation period.

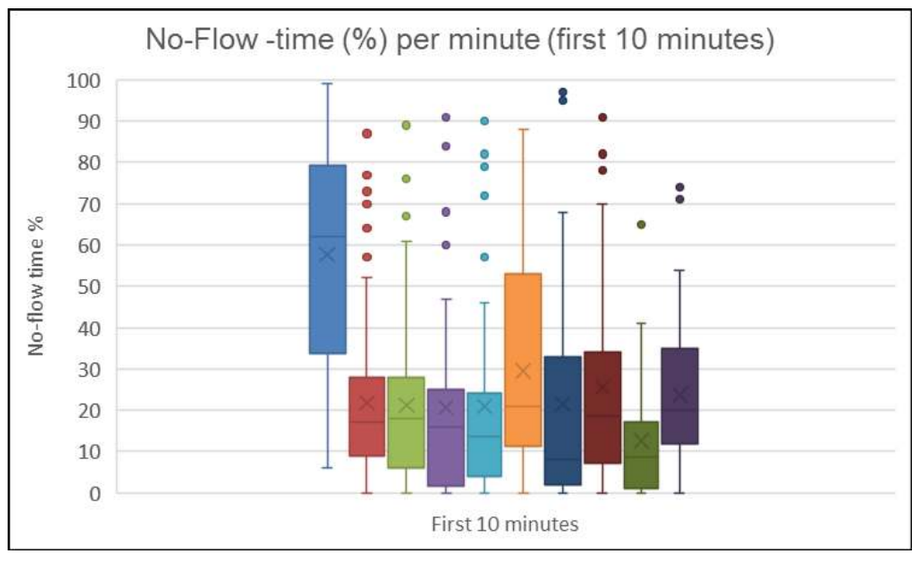
Results

Of totally 408 IHCA patients, CPR quality data were available for 74 (18%). The primary rhythm was asystole in 26 (35%), PEA in 38 (51%), VF in 8 (11%) and VT in 2 (3%) patients. The mean compression depth was 6,3 cm and the mean compression rate 108/min. Defibrillation was performed only in 14 cases. The mean pre-shock pause before the first shock was 14 seconds and the mean post-shock pause was 4 seconds. Return of spontaneous circulation (ROSC) was achieved in 37 patients (50%). After ROSC, 30 day-survival was 11/37 (14,9%) and 1-year-survival was 9/37 (12,2%). More detailed data are presented in the table and figures.

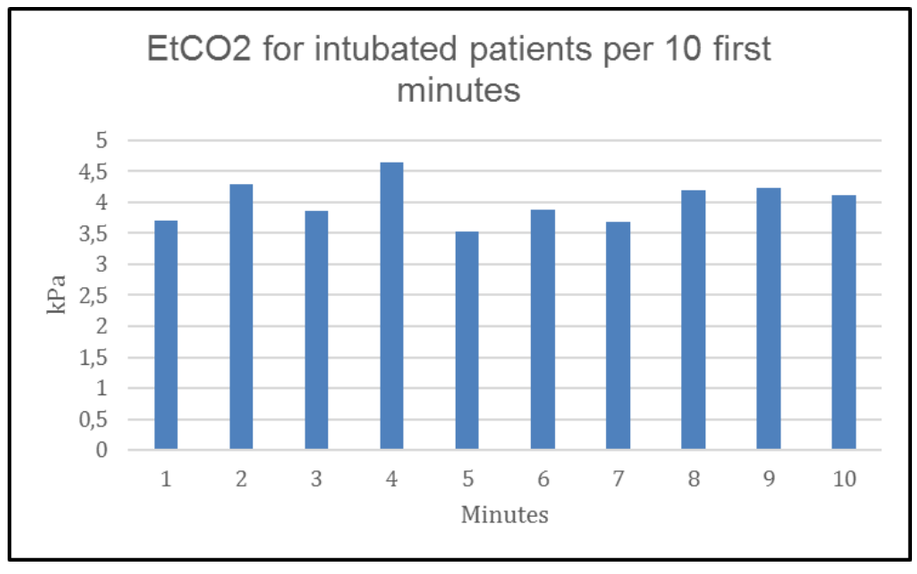
Conclusions

The performance of our resuscitation teams was satisfactory although we found too long no-flow times during resuscitations. Data were available for only a fraction of patients, which limits the strength of conclusions. We hope to use CPR quality data for debriefing after resuscitation and quality improvement in the future.





	All (n=74)
Primary ROSC	37 (50,0 %)
Survival 30 days	11 (14,9 %)
Survival 1 year	9 (12,2 %)
Intubated during resuscitation	19 (25,7 %)
Adrenaline given during resuscitation	49 (66,2 %)
Amiodarone given during resuscitation	6 (8,1 %)



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