

## FPS23

**Effect of bicarbonate administration on outcome in children in cardiac arrest**

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**Objectives:** Sodium bicarbonate is a drug used in cardiopulmonary resuscitation in children. It is still used frequently despite guidelines in case of blood acidosis with low pH or increased blood lactate. However, there are no studies to support this recommendation. We aim to detect whether children in cardiac arrest with decreased pH or increased blood lactate had better outcome when they were administered sodium bicarbonate iv.

**Methods:** It was an observational multicentred prospective study in children with Emergency Department Cardiac Arrest (EDCA) or Out-of-hospital Cardiac Arrest (OHCA). We considered good overall outcome at 6 months when Paediatric Overall Performance Category (POPC) was 1 or 2. We used Student's T, Chi square test, Fisher's exact test and OR and its 95% confidence interval (95%CI).

**Results:** 273 CA, 81.7% OHCA, median age 2.5 (0.1–17.4). 112 of them were treated with sodium bicarbonate iv. The treatment with sodium bicarbonate was associated with higher blood lactate ( $p=0.00003$ ) and lower blood pH ( $p=0.00002$ ). When bicarbonate was given, there was lower frequency of return of spontaneous circulation (ROSC), (57% vs. 85.5%,  $p<0.0000001$ , OR 4.45 [2.4–8.2]), lower survival to discharge (15.2% vs. 42%,  $p<0.0000$ , OR 4.1 [2.1–7.3]) and lower rate of POPC1 or 2 at 6 months (11.6% vs. 31.1%,  $p=0.006$  OR 3.5 [1.7–7.2]).

When we compared the rate of outcomes with or without sodium bicarbonate as treatment, in children with acidaemia with different criteria:

	ROSC	Survival to discharge	POPC 1 or 2
In children with lactate >10 mmol/l	n.s.	n.s.	n.s.
In children with pH <7.10	72.5% vs. 94.9%, $p=0.001$ , OR 7.1 (2.1–7.3)	n.s.	n.s.

**Conclusions:** While in children with EDCA or OHCA sodium bicarbonate is administered more frequently when acidosis is present, we do not detected improvement in ROSC, survival to discharge or good overall outcome at 6 months with this treatment.

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## FPS24

**Use of live video streaming from bystander's smartphone in out-of-hospital cardiac arrest**

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**Purpose of the study:** To investigate if live streaming of video from bystander's smartphone to the emergency medical dispatcher can improve the quality of bystander cardiopulmonary resuscitation (CPR) in out-of-hospital cardiac arrest (OHCA).

**Materials and methods:** Copenhagen Emergency Medical Services receive 130,000 emergency calls annually. The emergency medical dispatcher guide bystanders in CPR in case of OHCA. After chest compressions were initiated, live video could be added to the communication by the medical dispatcher using GoodSAM® Instant-On-Scene technology. Afterwards, the quality of CPR was evaluated from the video and the audio recording by a Basic Life Support instructor and a physician. The CPR quality was registered from the time when the live video started and after the emergency medical dispatcher used the live video to guide (video-DA-CPR).

**Results:** CPR was provided with live video stream in 51 OHCA calls, of which 90 bystanders performed chest compressions. The bystanders' hand position was incorrect in 36 cases (40%) and improved in 23 of these cases (64%) after video-DA-CPR. The compressions rate was incorrect in 35 cases (39%) and improved in 26 cases (74%). In one case the compressions rate was too fast after video-DA-CPR. The assumed compressions depth was incorrect in 54 cases (60%) and improved in 32 cases (59%). Evaluation of the video-DA-CPR was not possible for: hand-position 8 (9%), compressions rate 12 (13%), and compressions depth 16 (18%). Hand-off