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Emergency
Medicine
Pharmacotherapy
with Resuscitation
(EMPowerRx)
Conference



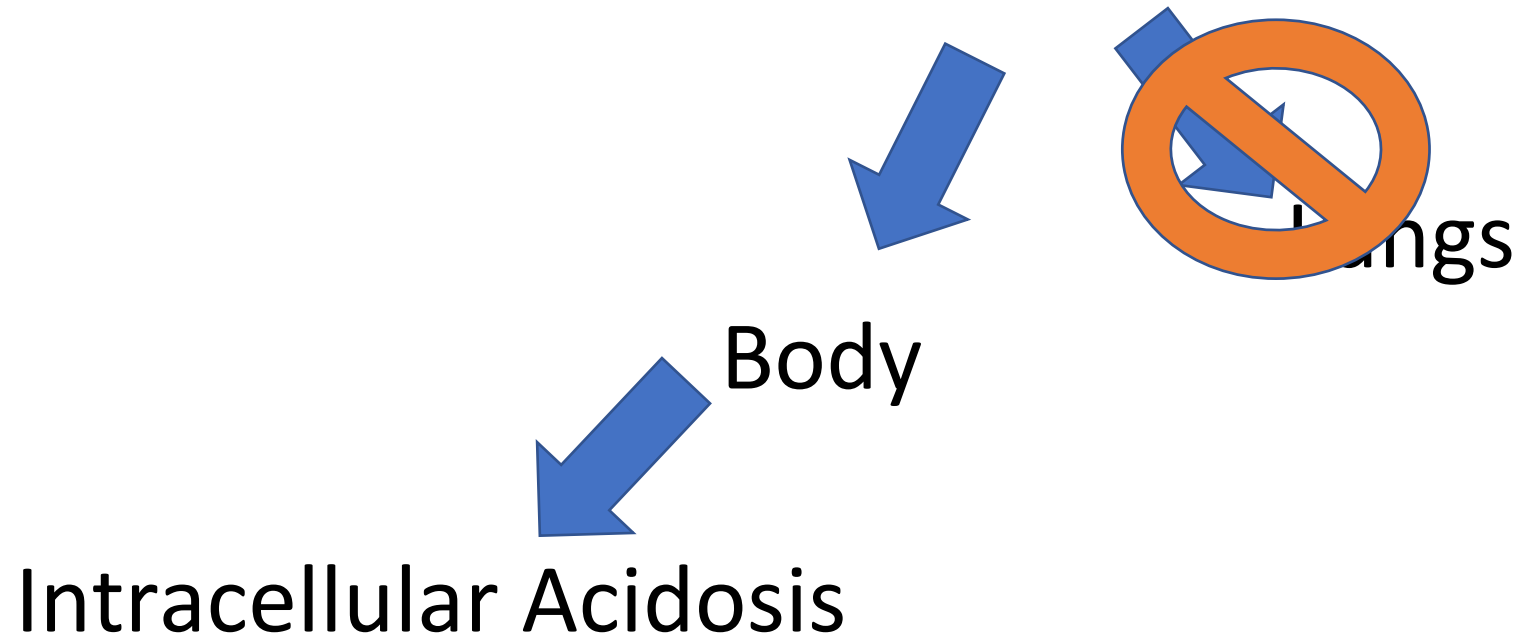
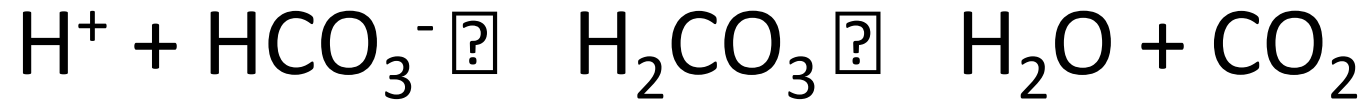
Don't Push the Bicarb: Sodium Bicarbonat e in Cardiac Arrest

Jenn Bingham, PharmD



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Correction of acidosis?



Murchison C. November 5, 2018. <http://www.emdocs.net/sodium-bicarbonate-therapy-does-not-work-in-cardiac-arrest/>

The Effect of Prearrest Acid-Base Status on Response to Sodium Bicarbonate

225 patients

- 102 acidotic vs. 123 nonacidotic

Return of Spontaneous Circulation (ROSC) for at least 5 min

- Acidotic: 53.9%
- Nonacidotic: 48.8%
- $p = 0.44$

Change in serum bicarbonate

- Acidotic: 1 ± 6.2
- Nonacidotic: -3.2 ± 5.2 mmol/L
- $p < 0.01$

McLean H, et al. *Ann Pharmacother.* 2021.

Interference with capnography

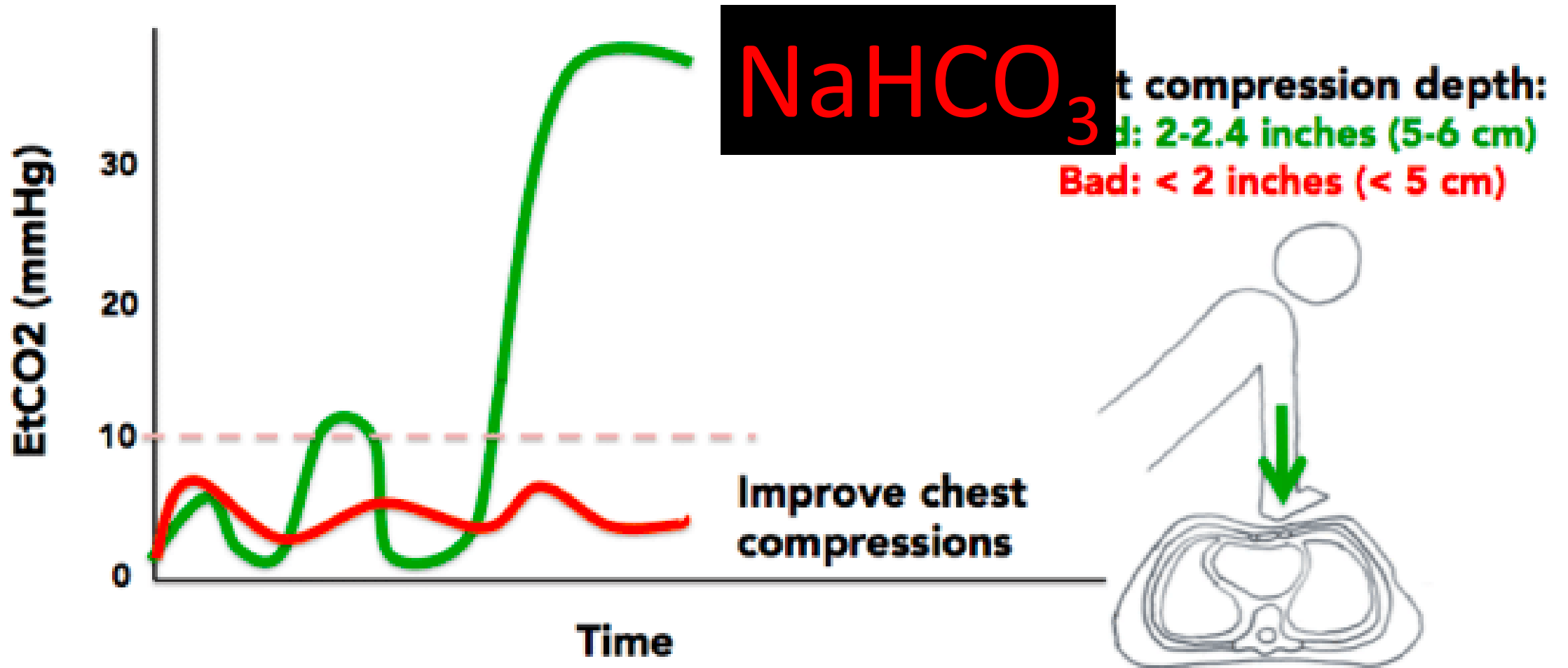


Image: <https://www.aliem.com/end-tidal-co2-in-cardiopulmonary-resuscitation/>

Recent Meta-analyses

Study	ROSC OR (95% CI)	Sustained ROSC OR (95% CI)	Survival to Discharge OR (95% CI)
Wu et al, 2020 (6 OBS) n = 18,406; SB: 7,237	1.185 (0.680-2.065)	-	0.296 (0.066-1.323)
Sub-group analysis of North America	0.521 (0.432-0.628)	-	0.102 (0.066-0.156)
Alshahrani et al, 2021 (4 RCTs; 10 OBS) n = 28,412; SB: 14,071	1.54 (0.38-6.27)	0.27 (0.07-0.98)	1.06 (0.82-1.37)

Good Neurological Outcomes

Study	Patients with SB n (%)	Patients without SB n (%)	OR (95% CI)	p-value
Kawano et al, 2017 n = 13,865 SB = 5165	62 (1.2)	831 (10.6)	0.09 (0.07-0.11)	-
Wang et al, 2021 n = 1060 SB = 733	27 (3.7)	32 (9.8)	-	<0.001

Conclusions

- Sodium bicarbonate use in cardiac arrest:
 - Does not improve rates of ROSC in acidotic versus non-acidotic patients
 - Does not improve rates of ROSC, sustained ROSC, or survival to discharge
- Sodium bicarbonate use in cardiac arrest is not associated with good neurological outcomes



Image: <https://imgflip.com/memetemplate/212259281/We-dont-do-that-here>

References

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Arrest
in Cardiac

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