CPR-INDUCED CONSCIOUSNESS: ATTENTION REQUIRED FOR CAREGIVERS AND MEDICATION

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BACKGROUND

CardioPulmonary Resuscitation Induced Consciousness (CPRIC) can be a source of severe psychological impact on the patient, and also on the professionals.^{1,2} We noticed increasing caregiver's reports on CPRIC, including hints of avoidance, stress reactions and professional dysfunction.^{2,3}

We also noticed that suspected CPRIC was associated with repetitive interruption of compressions, decreased compression depth, and reports of subjective feelings offering substandard care.

A clear guideline has not yet been described, amplifying the stress reaction in caregivers.

Some suggestions for pain-sedation management include opioids,⁴ benzodiazepam and ketamine.^{1,5} These choices can be pharmacologically unexpected.

As high quality compressions are a focus, both manually and mechanically, the issue of CPRIC is increasing. However, it is not a prediction of survival.

PURPOSE

We assessed frequency and severity of CPRIC induced psychological impact for caregivers, as well as their interventions of CPRIC occurred, to be able to make a recommendation for a guideline and guidance.

METHODS

- Anonymous questionnaire for: ANE, ED, ICU physicians
- Focus questionnaire: incidence of experience, perceptions and remediations

References:

- ¹ Rice DT, et al. Resuscitation 2016;103:e15-e16.
- ² Olausson A, et al. Resuscitation 2015;86:44-8.
- ³ Krage R, et al. Emerg Med J 2017;34(11):728-33.
- ⁴ In't Veld, et al., Landelijk Protocol Ambulancezorg, Zwolle (NL), 2014.
- ⁵ Olausson A et al. Resuscitation 2017;113:44-50.

FINDINGS & CONCLUSIONS

71 questionnaires (86%) were returned:

- 48% multiple experiences with CPRIC
- >90% (detrimental) effects on treatment and team-members
- 52% personal discomfort
- 7% sleeplessness, nightmares, mood changes, extending up to weeks
- All exposed reported frustration in (lacks of) remediation

Medication used:

- Midazolam (45x)
- Ketamine (11x)
- Opioids alone (4x)
- Combinations with diprivan, etomidate and esketamine were reported

CPRIC should receive more attention. There is a need for guidelines focused on prevention of physiological distress and medication strategies for caregivers and patients.

Pharmacologically, ketamine-midazolam seems the most logical choice in CPRIC, targeting analgesia and anterograde amnesia, with less vascular resistance loss (table 1).

Table 1: medication consideration

Medication	Dosage IV	Considerations
Esketamine	0.5 - 1 mg/kg	Analgesia, sedation, bronchodilatation, hemodynamic stability, restlessness
Midazolam	2.5 – 5 mg	Anterograde amnesia, mild dose-dependent hypotension, unpredictable effect
Fentanyl	1 - 2 µg/kg	Analgesia, hypotension
Propofol	0,5-1 mg/kg	Sedation, dose-dependent hypotension
Etomidate	0.1 mg/kg	Sedation, hemodynamic stability, epileptic properties, adrenal insufficiency, no maintenance

TAKE HOME MESSAGE

A clear and pharmacologically sound CPRIC guideline is necessary, as CPRIC incidence is increasing due to improved resuscitation.

Attention is needed for both caregiver and patient to avoid negative physiological consequences.

We advise a combination of Ketamine and Midazolam for analgesia and anterograde amnesia.

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