

CQ10 Are postmortem images useful in determining the cause of death in cases of out-of-hospital cardiopulmonary arrest?

Grade of recommendations: C2

There are no research reports examining the cause of death in out-of-hospital cardiopulmonary arrest in postmortem images.

Explanation-----

Background

Out-of-hospital cardiopulmonary arrest refers to cases with arrest of the cardiac function, pulmonary function, or both occurring outside medical institutions. It is classified into primary (cardiogenic) cardiac arrest caused by the heart and secondary cardiac arrest caused by non-heart sources [1]. Generally, most causes are primary cardiac arrest. Coronary artery disease and dilated cardiomyopathy are reported to account for more than 90% [2]. In Germany, 97% are due to cardiogenic cardiac arrest, and other causes include stroke, respiratory failure, drowning, overdoses, and other malignancies. In a Swedish report, which includes child cases, 67.1% have cardiogenic cardiac arrest, and other causes include asphyxia, SIDS, drowning, suicide, respiratory diseases, trauma, and overdoses. In addition, 45% of children with out-of-hospital cardiac arrest are assigned as unknown causes (including SIDS), and 20% as trauma, 10% as chronic diseases, and 6% as pneumonia [3].

Image findings

There are no reports of detailed postmortem CT studies regarding the cause of death in out-of-hospital cardiopulmonary arrest. Although it is generally difficult to detect acute myocardial infarction in postmortem CT, enhanced postmortem CT may be able to diagnose coronary artery disease. Postmortem MRI may also be able to detect acute myocardial infarction (CQ28).

In addition, postmortem images may detect cerebral hemorrhage, drowning, overdoses, malignant tumors, trauma, and pneumonia. Postmortem images may be helpful when considering abuse to rule out SIDS.

Literature search formula and literature selection (2019/8/3)

PubMed

#	Search formula	Number of documents
1	((out-of-hospital) AND cardiac arrest) AND causes of death	438

Ichushi (Medical Journal)

#	Search formula	Number of documents
1	((死後 CT/AL) or (死後 MRI/AL) or ((死亡時画像診断/TH or 死亡時画像診断/AL)) or ((死亡時画像診断/TH or オートプシー・イメージング/AL)) or ((死亡時画像診断/TH or オートプシーイメージング/AL)))) and (LA=日本語,英語 and PT=会議録除く)	668
2	(院外心停止/TH or 院外心肺停止/AL)	4,215
3	#1 and #2	28

From other than search formula

[1]

References

[1] Japanese Association for Acute Medicine: Glossary of Medical Terms

<http://www.jaam.jp/html/dictionary/dictionary/word/1002.htm>

[2] Porzer M et al: Out-of-hospital cardiac arrest. Biomed Pap Med Fac Univ Palacky Olomouc Czech Repub 2017; 161: 348-353 (Level 1)

[3] Writer H: Cardiorespiratory arrest in children (out of hospital). BMJ Clin Evid 2010; 25: 2010 (Level 1)