**POSTMORTEM ECHOCARDIOGRAPHY AT EMERGENCY DEPARTMENT**

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*Background*: Sudden cardiac arrest (SCA) accounts for 15% of all-cause mortality in US and 50% of all cardiovascular mortality in developed countries.

*Objectives*: Postmortem echocardiography (PME) performed at emergency department may be informative to reveal structural cardiac problems, which causes 10% of SCA. *Methods* :In this preliminary case-series study, we tried to evaluate interrater reliability of PME, with which 2 emergency physicians (EP) measured diameters of left atrium (LA), left ventricle (LV), and aorta; thicknesses of posterior wall (PW) and interventricular septum (IVS); presence or absence of regional wall thinning, calcification of aortic and mitral valves and pericardial effusion. The validity was sought with the cardiologist’s measurement as a reference standard.

*Results*: Four mortality cases after CPR were collected. (3 male, 45-80 years old, 2 SCA, BMI 22.0-27.7 kg/m2). PME were performed by 2 EPs per each case except one case. They began within 10 minutes after death declaration with each exam taking 3-6 minutes except for one case (12 minutes). Parasternal views on either supine or left decubitus position were most helpful to identify chamber size and LV wall thickness completely, while the other parameters were evaluated incompletely (43~71%). Adequacy of the images were rated as fair by the cardiologist. Intra-class correlation coefficient for interrater reliability and validity was 0.97 (EP vs EP) and 0.95 (EP vs cardiologist), respectively. (p<.001) The mean differences (standard deviation in parenthesis) of measurement by EP and cardiologist were 0 (1), 4 (3), 1 (6), 1 (1), and 1 (4) mm for LA, LV, aorta, PW, and IVS, respectively. (n=7)

*Conclusion*: Reliable and valid PME could be performed by EPs. A large prospective study with close collaboration between EPs and cardiologists is needed to evaluate the feasibility and usefulness of PME to diagnose structural causes of SCA.