Exploring variations in current clinical practice regarding postoperative pericardial effusion: a questionnaire study

S.R. Van Dinter¹, W.W. Li¹, L.W. Wollersheim¹, W.J. Morshuis¹, N. Van Royen², H. Dieker², A.F.T.M. Verhagen¹

¹Radboud University Medical Center, Cardiothoracic Surgery, Nijmegen, The Netherlands; ²Radboud University Medical Center, Cardiology, Nijmegen, The Netherlands

Funding Acknowledgement: Type of funding sources: None.

Background: Postoperative pericardial effusion (PPE) is a frequently occurring event after cardiac surgery, potentially leading to life-threatening cardiac tamponade. Unfortunately, no guidelines are currently available on this subject, possibly leading to unwarranted variations in care in clinical practice.

Purpose: The goal of our study was to determine the diagnostic and therapeutic preferences of cardiologists and cardiothoracic surgeons in the Netherlands regarding PPE, and to evaluate possible variations in this matter between specialties and centers.

Methods: A web-based questionnaire was sent to all interventional cardiologists and cardiothoracic surgeons in the Netherlands. Diagnostic preferences for the evaluation of PPE were examined. Additionally, clinical preferences were explored in response to 4 patient scenarios with each illustrating a combination of either high or low clinical suspicion of cardiac tamponade and either high or low echocardiographic suspicion. Each scenario was also stratified by 3 different amounts of PPE (<1cm, 1–2cm, >2cm), leading to a total of 12 fictional patient cases (Figure 1).

Results: From 27 of the 31 contacted centers, a total of 94 clinicians responded to the survey, of whom 46 interventional cardiologists and 48 cardiothoracic surgeons. Cardiologists were more in favor of routine postoperative echocardiography in all patients (44%), whereas cardiothoracic surgeons preferred routine imaging after specific procedures, especially after mitral (85%) and tricuspid (79%) valve surgery. Overall, drainage of PPE (>48 hours postoperatively) was preferred through pericardiocentesis (83%) instead of surgical evacuation (17%). Regarding the patient scenarios, cardiothoracic surgeons were significantly more inclined to evacuate PPE compared to cardiologists for all scenarios combined (51% vs 37%, p<0.001) (Figure 1). In addition, evacuation was overall significantly more preferred by cardiologists employed in surgical centers when compared to those working in non-surgical centers (43% vs 31%, p=0.02). Results from the interrater agreement analysis of groups of clinicians working in the same center varied from very poor up to very good (kappa value of 0.22–0.67), suggesting existing variation of PPE treatment preferences even within one center.

Conclusions: Our study highlights the significant variation of preferences in contemporary PPE management between cardiothoracic surgeons and interventional cardiologists in the Netherlands, sometimes even within the same center. These findings are the possible consequences of a current lack of general recommendations or guidelines. This could lead to unwarranted variation in care and additional research is necessary to provide general recommendations.

Figure 1. Responses on the four scenarios with four possible treatments options, shown by bar charts. Each scenario (A–D) has a different combination of either high or low clinical and/or echocardiographic risk for cardiac tamponade. All cases are displayed with three echocardiographic sizes of pericardial effusion (<1, 1–2, >2 cm). CAR = cardiologist; CTS = cardiothoracic surgeon; PPE = postoperative pericardial effusion; TTE = transthoracic echocardiography. * = p < 0.05.