

Pulmonary hypertension: scientific and practical aspects of right heart catheterization (message three)

E.M. Khodosh^{1, 2}, M.I. Kozhyn¹, O.K. Yakovenko³

1. Kharkiv National Medical University, Kharkiv, Ukraine

2. Municipal Non-Profit Enterprise “City Clinical Hospital No. 13” of the Kharkiv City Council, Kharkiv, Ukraine

3. Lesya Ukrainka Volyn National University, Lutsk, Ukraine

Conflict of interest: none

BACKGROUND. The development of right heart catheterization has provided doctors with the opportunity to diagnose pulmonary hypertension as a result of multiple diseases, as well as hemodynamic disorders in the small circle of blood circulation in patients with congenital and acquired right heart defects. Assessment of the parameters obtained during right heart catheterization allows monitoring the condition of patients in intensive care units with severe cardiovascular diseases.

OBJECTIVE. To review the development of right heart catheterization, which has led to the possibility of conducting physiological studies of cardiovascular dynamics in patients with various diseases, as well as to review current disputes regarding the extension of right heart catheterization up to the pulmonary artery.

MATERIALS AND METHODS. Animal experiments for the development of heart catheterization; experiments on humans to measure heart pressure; right heart catheterization and Fick's direct principle; right heart catheterization as a universal tool for hemodynamic research; contributions of various investigators to the development of right heart catheterization are considered.

RESULTS AND DISCUSSION. Understanding the history of right heart catheterization allows physicians to better appreciate the current clinical applications and limitations of this important therapeutic modality. It has been demonstrated that a pulmonary artery catheter provides the physician with the advantage of continuous hemodynamic monitoring, which may assist the physician in making optimal therapeutic decisions to prevent right ventricular decompensation.

CONCLUSIONS. Right heart catheterization is an important diagnostic tool that assists the physician in diagnosing pulmonary hypertension as a manifestation of a wide range of heart and lung diseases and, in addition, when the catheter is placed proximal to the right atrium (auricle), it provides an important and safe route for drug administration and parenteral nutrition.

KEY WORDS: catheterization of the right heart, catheterization of the pulmonary artery, hemodynamics, cardiovascular diseases, systemic blood flow, pulmonary blood flow.
