Valvular heart disease – is there still room for invasive hemodynamic evaluation

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The development of echocardiographic methods and magnetic resonance for the evaluation of heart structure and function raises the question of the role of right-sided heart catheterization (RHC) or invasive hemodynamic evaluation (IHE) in valvular heart diseases. According to current guidelines, this method occupies a peripheral role and is reserved for situations where non-invasive testing is non-inclusive or discordant with clinical status¹. As pulmonary hypertension (PH) is one of the criteria for surgery in asymptomatic aortic stenosis and mitral regurgitation (MR), it is especially important to measure it accurately. However, non-invasive measurement of PH based on echocardiography has its limitations and the possibility of error and is particularly problematic in the presence of severe tricuspid regurgitation (TR) and reduced right ventricular (RV) function. A typical example where this is particularly important is persistent severe TR after mitral valve surgery leading to dilatation and dysfunction of the RV. Cardiac reoperation carries an increased risk, but it is considered in the absence of left-sided valve dysfunction, severe RV or left ventricular (LV) dysfunction and severe pulmonary vascular resistance/hypertension where RHC plays a key role¹. A particular problem for cardiac evaluation is multiple and mixed valvular heart disease, especially in the presence of some other heart pathology such as coronary heart disease, LV dysfunction or constriction². Exercise RHC is becoming increasingly popular in the diagnosis of heart failure with preserved systolic function, and now it is a question of its role in the diagnosis of valvular disease as well. The test has the potential to predict a worse outcome and thus for earlier surgery in asymptomatic patients e.g. with aortic stenosis or MR^{3.} In conclusion, IHE is a useful and relatively harmless tool in the examination of valvular heart disease, but experience of cardiology teams is needed to get a true benefit of the method and to avoid misleading information. Gaining experience requires hard work perhaps even in cases where IHE is not fully indicated.

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