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Significant coronary artery disease: An important predictive factor for severe aortic stenosis

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Aim: This study was conducted to evaluate the prevalence of significant Coronary Artery Disease (CAD) in patients with severe Valvular Heart Disease (VHD) and its association with different types of VHD. Our study aims to identify CAD as a risk factor over time for development and progression of aortic stenosis.

Method: A retrospective study was conducted on 1,308 consecutive patients who underwent surgery due to severe VHD in the cardio-vascular department of NDSUH (Notre-Dame de Secours University Hospital) between December 2000 and December 2016. According to transthoracic echocardiography, patients were divided into 4 groups, patients with severe Aortic Stenosis (AS), patients with severe Aortic Regurgitation (AR), patients with severe Mitral Stenosis (MS) and patients with severe Mitral Regurgitation (MR). Pre-operative coronary angiography was reviewed for the presence or the absence of significant CAD ($\geq 50\%$ luminal stenosis). 2×2 tables and chi square test were used.

Result: Of the 1,308 patients with severe VHD, 1002 patients had isolated aortic valve disease, 240 patients had isolated mitral valve disease and 66 patients had combined aortic-mitral valve disease. CAD was detected in 27.75% of all patients with severe VHD, in 32% of patients with isolated aortic valve disease and in 15% of patients with isolated mitral valve disease. Statistical analysis shows a highest prevalence in patients with severe aortic valve stenosis and a significant relationship between CAD and aortic valve disease, mainly severe aortic stenosis ($P < 0.0001$).

Conclusion: The prevalence of significant CAD in patients undergoing valvular heart surgery is 27.5% and it is highest in patients with AS. This study identifies that CAD correlates significantly with aortic valve disease and is of high predictive value in those with AS. Therefore, strengthening the prevention of CAD in the clinical setting has a positive significance for reducing or delaying the incidence of VHD, mainly AS.

Prevention of man, rehabilitation of the planet

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Our planet is in a condition of disease that is approaching irreversibility and the man is the first leaving creature able not only to change the course of nature but also to set the stage for his own extinction by his own efforts. Pollution is not only one of the major determinants of climate changes and therefore of planet health, it also has a direct impact on individual health. Desertification and depletion of aquifers will cause wars and migrations within a few decades. Physicians never discuss of planetary health they think they have to focus on human health. They don't realize that these two aspects, the planetary and the individual one, are closely related and aggressively pursue prevention of each human being is the way to save the planet. Heart failure represents an excellent model to face this problem. We have more and more effective drugs and devices to reduce mortality but consequently health care costs rise unsustainably. The only way to maintain sustainability of Global Health Care is to avoid that people get sick, working efficiently on prevention of heart failure risk factors: hypertension, diabetes, coronary artery disease and so on. And what is true for heart failure is true for each other preventable disease, from tumors to renal insufficiency, diabetes, COPD and everything else. If we look at the keys to preventing all these illnesses, responsible for the most health damage in terms of morbidity and mortality, we note that recommendations are always the same, healthy eating, physical activity, avoid smoke. And if we analyze in detail each prevention measure, and its weight on global welfare, we will realize astonishingly and fascinatingly that respecting those rules on a global scale wouldn't lead only to a dramatic reduction in people mortality and morbidity and in healthcare costs, but what's more important it would represent the most powerful measure to combat global warming and climate changes. Prevention of man can lead to rehabilitation of the planet.

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