

Propositions belonging to the thesis

Pulmonary Hypertension: Cardiac Pathophysiology and Tryptophan Metabolism

Zongye Cai, Rotterdam, 26.06.2020

1. Exercise stress testing is useful to unmask right ventricular dysfunction at an early stage of chronic thromboembolic pulmonary hypertension. (This thesis)
2. Oxidative stress and activation of transforming growth factor beta 1 signaling contribute to right ventricular remodeling in chronic thromboembolic pulmonary hypertension. (This thesis)
3. Upregulation of the endothelin pathway in the lung contributes to the progression from isolated post-capillary pulmonary hypertension towards combined pre- and post-capillary pulmonary hypertension. (This thesis)
4. Right ventricular oxygen delivery during exercise is impaired in the early stages of chronic pulmonary hypertension and contributes to right ventricular dysfunction. (This thesis)
5. Inflammation induces activation of tryptophan-kynurenine metabolism in patients with pulmonary arterial hypertension, which contributes to pulmonary vascular remodeling. (This thesis)
6. Identification of novel pathobiological mechanisms underlying the progressive pulmonary vascular remodeling, perivascular inflammation and loss of pulmonary vessels is required, in order to be successful in therapeutic innovations aimed at reversing pulmonary vascular disease and regenerating normal pulmonary vessels. (Humbert M, Guignabert C, et al. Eur Respir J 2019)
7. Inflammation and immune dysregulation accelerate pulmonary vascular remodeling and promote autoimmune responses in pulmonary arterial hypertension. (Huertas A, Tu L, et al. Cardiovasc Res 2020)
8. Right heart failure due to pulmonary hypertension is a consequence of increased afterload rather than a mere myocardial disease, therefore, a full description of the cardiopulmonary unit is required in the study of right heart failure. (Vonk-Noordegraaf A, et al. Eur Respir J 2019)
9. It is optimal to prevent the onset of diseases, acceptable to diagnose and treat them in an early stage, while increasingly challenging at late stages. (Simiao Sun, Traditional Chinese Medicine Guidelines 652)
上医医未病之病，中医医欲病之病，下医医已病之病。孙思邈，千金要方，永徽三年
10. If the COVID-19 pandemic results in a closer global cooperation, it will be a victory not only against this virus, but against all future pathogens (Yuval Noah Harari, Time 2020) as well as many other diseases including pulmonary hypertension. (Zongye Cai, 2020)
11. Make it happen. (The slogan for the municipality of Rotterdam, the Port Authority and Erasmus University since Dec 2014)