Novel treatment algorithm launched in ESC/ERS pulmonary hypertension guidelines

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A novel treatment algorithm for pulmonary arterial hypertension is launched today in new pulmonary hypertension guidelines from the European Society of Cardiology (ESC) and European Respiratory Society (ERS). The protocol aims to give patients the best chance of a good clinical outcome in a condition with dismal prognosis which puts severe limitations on patient choices including avoiding pregnancy, excessive physical activity and certain types of travel.

The 2015 ESC/ERS Guidelines for the diagnosis and treatment of pulmonary hypertension are published online in the *European Heart Journal* and the *European Respiratory Journal* as well as on the ESC Website. The document was written jointly by the ESC and the ERS and incorporates evidence accumulated since the previous joint guidelines were published in 2009.

Pulmonary hypertension is a condition in which blood pressure is raised in the pulmonary arteries, which supply blood to the lungs. It is a serious medical condition that leads to progressive right ventricular dysfunction with symptoms such as shortness of breath, fatigue, weakness, angina and syncope typically induced by exertion.

The guidelines introduce a novel treatment algorithm for pulmonary arterial hypertension (PAH) and treatment tables outlining when to use recently approved drugs. Treatment strategies are based on the patient's risk profile. Sequential and initial combination therapies are recommended following the emergence of new evidence and early

consideration for lung transplantation is recommended for the first time. A novel treatment algorithm is also presented for chronic thromboembolic pulmonary hypertension (CTEPH) that includes surgical, medical and interventional strategies.

Professor Nazzareno Galiè, ESC Chairperson of the guidelines Task Force, said: "Since the 2009 guidelines a huge amount of evidence has accumulated on the pharmacological treatment of patients with PAH. We have reconciled all the available data in a comprehensive treatment algorithm and in multiple tables that give recommendations for different patient risk profiles. The information is inclusive enough to be applicable in different healthcare systems with heterogeneous drug availability. The algorithm for CTEPH is more detailed and recommends specific imaging tests to better define the treatment strategy."

Clinical and haemodynamic classifications have been updated using new evidence on genetic and drug causes. Paediatric disorders are also classified and pulmonary vascular resistance (PVR) is included in the diagnosis of PAH. A new diagnostic algorithm starts with the echocardiographic probability of pulmonary hypertension (low, intermediate, high) and is followed by identification of the most common causes such as pulmonary hypertension due to heart diseases, lung diseases and CTEPH.

"Pulmonary hypertension can involve multiple clinical conditions," said Professor Marc Humbert, European Respiratory Society (ERS) Co-Chairperson of the guidelines Task Force. "The updated classifications and new diagnostic algorithm will help clinicians to better define an individual patient's disease so that the most appropriate treatment can be given."

Expert centres are given a pivotal role in the management of pulmonary hypertension, starting with the diagnostic process. Professor Humbert

said: "Right heart catheterization is recommended for confirming the final diagnosis of PAH and CTEPH and this technically demanding procedure provides more accurate information and has lower morbidity when performed in expert centres. Patients with established hypertension should be referred early to expert centres to ensure they are given the best care."

For the first time, the definition of satisfactory/unsatisfactory clinical responses to therapy is based on the change or maintenance of an individual patient risk profile. Nine clinical, functional, exercise, biochemical, imaging and haemodynamic parameters are assessed to calculate an estimated one year mortality of low (10%).

Professor Galiè concluded: "The new data and the new recommendations included in this updated version of the pulmonary hypertension guidelines are intended to provide a practical approach to the management of these complex patients. In addition, the typical multidisciplinary approach will enhance the level of collaboration between various specialists and centres with different levels of expertise and experience."

More information: 2015 ESC/ERS Guidelines for the diagnosis and treatment of pulmonary hypertension. European Heart Journal. 2015. DOI: 10.1093/eurheartj/ehv317

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