CHD-PAH IS A SILENTLY PROGRESSIVE DISEASE[1]

HOW CAN YOU IDENTIFY THE DISEASE EARLY AND IMPROVE OUTCOMES FOR YOUR PATIENTS?

CHD, congenital heart disease; PAH, pulmonary arterial hypertension

CP-213833 | March 2021

WHAT IS THE CONNECTION BETWEEN CHD AND PAH?

PAH is a severe and progressive disease*[2] and a common complication of CHD.[3,4] Timely correction of defects can reduce the risk of PAH but it may still develop.[5]

UP TO **12%**

OF PATIENTS WITH CORRECTED SIMPLE CHD ARE AT RISK OF PAH‡[4,6]

IF LEFT UNTREATED, PAH EVENTUALLY RESULTS IN RIGHT HEART FAILURE AND DEATH[2,7]

CHD, congenital heart disease; mPAP, mean pulmonary arterial pressure; PAH, pulmonary arterial hypertension; PAWP, pulmonary artery wedge pressure; PVR, pulmonary vascular resistance
*The current haemodynamic definition of PAH is mPAP >25 mmHg, PAWP <15 mmHg and PVR >3 Wood units.[3]
‡Data from adult patients with CHD in the Euro Heart survey database (N=1,877).[4]

PATIENTS WITH CHD-PAH HAVE POOR OUTCOMES[4,8]

In patients with corrected CHD, development of PAH is associated with significant worsening in functional limitations and poor long-term survival.*[4,8]

MORE THAN **1/3**

PATIENTS WITH CORRECTED CHD-PAH DIE WITHIN 10 YEARS OF PAH DIAGNOSIS‡[8]

IDENTIFYING PAH AS EARLY AS POSSIBLE IN PATIENTS WITH CHD IS CRITICAL TO IMPROVING THEIR OUTCOMES[9–11]

CHD, congenital heart disease; CI, confidence interval; PAH, pulmonary arterial hypertension
*Data from patients with CHD-PAH in an Italian database study (N=192)[8] and from patients with CHD in the Euro Heart survey database (N=1,877).[4]
‡N=192 patients with CHD-PAH; 65% survival at 10 years (95% CI: 43–80%).[8]

ALL PATIENTS WITH CORRECTED CHD SHOULD BE PROACTIVELY SCREENED FOR PAH WITH ECHOCARDIOGRAPHY[3,12–15]

Patients with CHD can experience a delay of almost 2 years between symptom onset and diagnosis of PAH, which is associated with poor survival outcomes.[11] Regular, long-term screening for PAH is needed to help facilitate early diagnosis and timely treatment.[11,14]

Screening for PAH in CHD is **recommended in the 2015 ESC/ERS guidelines and 2018 WSPH proceedings.**[3,15] If PAH is suspected, patients should be referred to a specialist PH centre for right heart catheterisation to confirm the diagnosis.[3,12,13,15]

3–6 months
Screening* for PAH after defect correction[15]

Regular screening
Screening* for PAH in the years after defect correction*[14,15]

SINCE PAH CAN DEVELOP OVER TIME DESPITE SURGERY, PATIENTS WITH CHD NEED REGULAR, LONG-TERM SCREENING FOR PAH AFTER DEFECT CORRECTION[11,14]

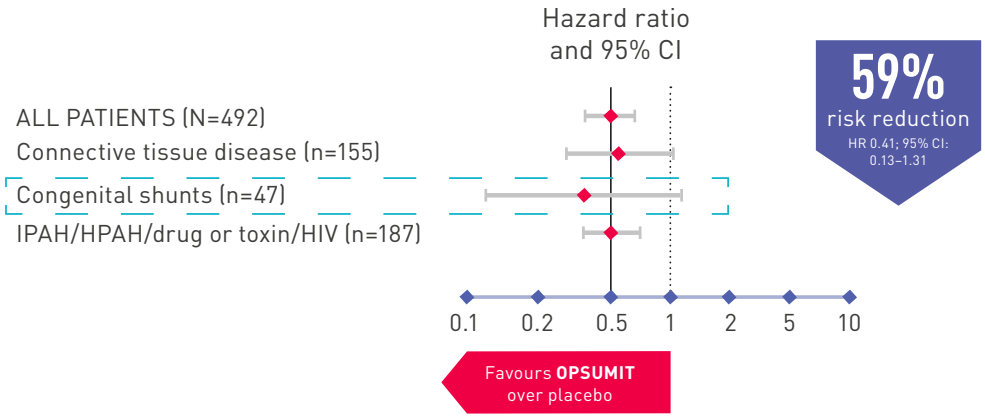
CHD, congenital heart disease; ECG, echocardiogram; ERS, European Respiratory Society; ESC, European Society of Cardiology; PAH, pulmonary arterial hypertension; PH, pulmonary hypertension; WSPH, World Symposium on Pulmonary Hypertension

*Screening should include clinical, echocardiographic and ECG evaluation. Annual screening should be planned for corrected patients who presented with increased baseline pulmonary vascular resistance or with combinations of other predisposing factors.[15]

OPSUMIT (MACITENTAN) AND UPTRAVI (SELEXIPAG) CAN IMPROVE LONG-TERM OUTCOMES FOR YOUR PATIENTS WITH CORRECTED SIMPLE CHD-PAH*[16–18]

The SERAPHIN study included a broad range of patients with PAH, including patients with corrected simple CHD-PAH,* who comprised **8.4% of the trial population.**[16]

Primary endpoint of morbidity and mortality‡ by PAH aetiology[17,19,20]



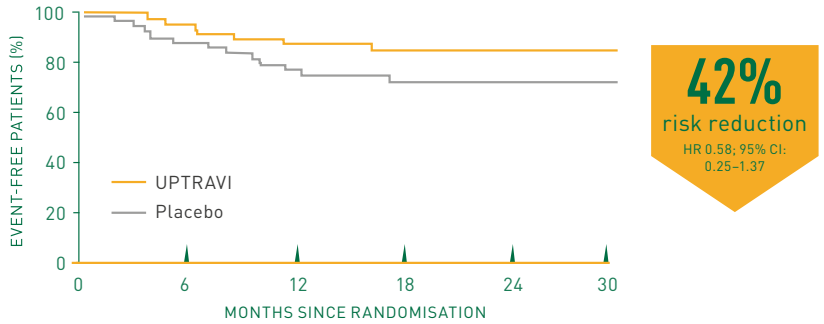
Adapted from Pulido *et al.* 2013,[17] DoF[19] and OPSUMIT PI[20]

IN THE SERAPHIN STUDY, OPSUMIT REDUCED THE RISK OF A MORBIDITY-MORTALITY EVENT‡ BY 59% VS PLACEBO IN PATIENTS WITH CHD-PAH*[17,19,20]

Adverse events observed in SERAPHIN that were more frequently associated with OPSUMIT included anaemia, bronchitis, headache, peripheral oedema and nasopharyngitis.[16]

The GRIPHON study included the largest population of patients with corrected simple CHD-PAH* in a randomised controlled trial to date, comprising **9.5% of the trial population**.[18,22]

Time to first morbidity-mortality event‡ in patients with CHD-PAH* in GRIPHON[18]



Patients at risk

UPTRAVI	60	53	43	29	20	12
Placebo	50	42	36	24	18	12

Adapted from Beghetti *et al.* 2019[18]

UPTRAVI REDUCED THE RISK OF A MORBIDITY-MORTALITY EVENT‡ VS PLACEBO BY 42% FOR PATIENTS WITH CHD-PAH* IN THE GRIPHON STUDY[18]

In GRIPHON, the most common adverse events associated with UPTRAVI were headache, flushing, nasopharyngitis, diarrhoea, vomiting, nausea, jaw pain, myalgia, arthralgia and pain in extremity.[22] For full safety and tolerability information, please consult the UPTRAVI Summary of Product Characteristics.[23]

CHD, congenital heart disease; CI, confidence interval; HIV, human immunodeficiency virus; HPAH, heritable pulmonary arterial hypertension; HR, hazard ratio; IPAH, idiopathic pulmonary arterial hypertension; PAH, pulmonary arterial hypertension

*PAH associated with corrected simple CHD (systemic-to-pulmonary shunts).[16,22]
‡Results were driven by a decrease in PAH worsening and do not apply to mortality on its own.[16,22]

HELP FACILITATE EARLY DIAGNOSIS AND TIMELY TREATMENT FOR YOUR PATIENTS WITH CHD-PAH AND IMPROVE THEIR LONG-TERM OUTCOMES

- **PAH IS A SILENTLY PROGRESSIVE DISEASE[1] AND A COMMON COMPLICATION OF CHD[4]**
- **PATIENTS WITH CHD MAY DEVELOP PAH EVEN AFTER DEFECT CORRECTION,[3,5] WHICH IS ASSOCIATED WITH POOR LONG-TERM SURVIVAL[8]**
- **EARLY IDENTIFICATION OF PAH IS CRITICAL TO IMPROVING PATIENT OUTCOMES[11]**
  - Regular screening for PAH using echocardiography is recommended for all patients with corrected CHD[3,12,14,15]
  - For patients with a suspicion of PAH, expedited referral to a specialist PH centre to confirm the diagnosis is advised[15]
- **EARLY PAH TREATMENT WITH OPSUMIT AND UPTRAVI MAKES A DIFFERENCE**
  - Proven to improve long-term outcomes vs placebo in a broad range of patients with PAH, including those with corrected simple CHD-PAH*[16–20,22,24–26]

JANSSEN IS THERE FOR THE WHOLE PAH JOURNEY

OPSUMIT® is an endothelin receptor antagonist (ERA) indicated for the treatment of pulmonary arterial hypertension (PAH, WHO Group I) to delay disease progression. Disease progression included: death, initiation of intravenous (IV) or subcutaneous prostanoids, or clinical worsening of PAH (decreased 6-minute walk distance, worsened PAH symptoms and need for additional PAH treatment). OPSUMIT also reduced hospitalization for PAH.[21]

UPTRAVI is indicated for the long-term treatment of pulmonary arterial hypertension PAH) in adult patients with WHO functional class (FC) II–III, either as combination therapy) in patients insufficiently controlled with an endothelin receptor antagonist (ERA) and/ or a phosphodiesterase type-5 (PDE-5) inhibitor, or as monotherapy in patients who are not candidates for these therapies. Efficacy has been shown in a PAH population including idiopathic and heritable PAH, PAH associated with connective tissue disorders, and PAH associated with corrected simple congenital heart disease.[23]

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CHD, congenital heart disease; PAH, pulmonary arterial hypertension; PH, pulmonary hypertension; WHO, World Health Organization
*PAH associated with corrected simple CHD (systemic-to-pulmonary shunts).[16,22]