

## Why did I get PH? The New Profile of Pulmonary Hypertension

We will discuss our current understanding of the various cause of PH, focusing on areas that have only recently begun to receive real attention. These include PH associated with heart and lung disease, with stimulant use, with HIV infection, and with obesity. We will review what information exists for these special forms of PH, what information needs to be gathered, and recommendations for diagnosis and treatment."

### 1. PH and heart disease

Many forms of heart disease, especially heart failure and valve disease, may be complicated by the development of PH. The first priority is to treat the heart disease optimally. If the PH persists despite this, some of our current PAH therapies may be cautiously considered. If used in patients with too much fluid overload these agents may worsen breathing and edema. Recent studies, however, suggest that if used properly they may lead to clinical improvement.

### 2. PH and lung disease

As above, many forms of lung disease, especially pulmonary fibrosis and emphysema, may also be complicated by the development of PH. Sometimes the PH is at the level expected for that patient's lung disease, and sometimes it is out of proportion to it. PAH therapies may be considered in some cases. However, caution must be taken as these treatments could lower oxygen levels and worsen breathing in some patients with PH from lung disease.

### 3. PH and stimulant use

New evidence suggests that excessive use of some stimulants, such as amphetamine, may lead to PH. Patients should be asked about any stimulant use, and users should be considered at risk for PH. Most physicians believe that stimulant-associated PH should be treated the same way we treat other forms of PAH.

### 3. PH and HIV

HIV disease is now well established as a risk factor for PAH. Patients with HIV should be suspected of having PH if they develop shortness of breath or signs of fluid overload with no other explanation. An echocardiogram is a useful first test if PH is suspected, and a heart catheterization can confirm the diagnosis. In small studies PAH therapies appear to be effective in treating HIV-associated PH.

### 4. PH and obesity

Due to the growing epidemic of obesity in the United States, obstructive sleep apnea (OSA) is increasingly evident. OSA imparts increased cardiovascular risk including for PH. The precise role of OSA in the genesis of PH has been difficult to ascertain, and further large studies are needed to confirm the association between OSA and PAH. Initial therapy must include optimal treatment of the OSA.