

# **SURGICAL TREATMENT OF CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION COMBINED WITH ATRIAL FIBRILLATION AND FLUTTER**

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## **Objective**

The most effective treatment for chronic thromboembolic pulmonary hypertension (CTEPH) is pulmonary endarterectomy (PEA). Approximately ten percent of our patients with CTEPH were additionally diagnosed with atrial fibrillations (AF) or flutter. Atrial fibrillation can be effectively treated with MAZE procedure. At our center we prefer to use cryomodification of this procedure. We started to combine PEA with MAZE procedure in 2005. The aim of this study is to analyze our early results in patients that underwent PEA combined with MAZE procedure.

## **Methods**

In the time period from September 2004 till February 2014 we operated on 229 patients with CTEPH. All patients underwent PEA using cardiopulmonary bypass (CPB) and deep hypothermic circulatory arrest. Additional procedures were carried out during cooling and rewarming time intervals in 35 (7%) patients. Cardiac procedure was performed throughout cooling or rewarming time interval during PEA in 81 patients (35, 4%). In 36 patients atrial septal defect (ASD) was closed, 29 patients underwent aortocoronary bypass (CABG), 17 patients underwent MAZE procedure, and 5 patients underwent valve repair or replacement surgery. The MAZE procedure was carried out as following: right and left side MAZE procedure in 10 patients, right side MAZE procedure in 6 patients, and left side MAZE procedure with mitral valve annuloplasty in one patient.

## **Results**

The early hospital mortality in group of patients with PEA was comparable to the group of patient that underwent PEA combined with MAZE procedure at 5.8%. In the time of hospital discharge 11 out of 16 patients had sinus rhythm (SR), accounting for 69%. One year after the initial surgery 66% of the patients had SR and 80% of the patients did not had AF. Average follow up time period is currently 54 months in 14 surviving patients with SR present in 71% of the patients. After the surgery, there was a considerable improvement in haemodynamic parameters (mPA, CI, PVR), functional classification and 6 minute walking test (6MWT) in patients with PEA, as well as in patients with PEA combined with MAZE procedure.

## **Conclusions**

Sinus rhythm is up the most importance for stable postoperative recovery for patients that underwent PEA. The combination of PEA with MAZE procedure significantly increases the chance of achieving sinus rhythm in treated patient. We believe that PEA combined with MAZE procedure is an effective therapeutic approach for treating patients suffering from CTEPH and AR or flutter. Pulmonary endarterectomy can be safely combined with MAZE and other cardiac procedures.