Pulmonary hypertension is a serious syndrome with very unfavorable prognosis. It encompasses numerous diseases and the only one which is surgical ly treatable is chronic thromboembolic pulmonary hypertension. Pulmonary endarterectomy (PEA) is a curative method for select patients with surgically accessible thrombotic obstruction. It involves not only the operation itself, but also complicated diagnostics, preoperative preparation, and sophisticated postoperative intensive care. According to contemporary world reviews of professional literatuře, mortality rates following PEA, range from 5 to 24 percent.
Better results with lower levels of mortality as well as morbidity are unambiguously proven in the centers with more experience where the highest numbers of such surgeries are undertaken. Good team work is an essential condition for a successíul PEA program and the anaesthetist is its indispensable member.
Anaesthesia of patients with chronic right ventricle dysfunction undergoing cardiac surgery using extracorporeal circulation brings about several diffieulties and we tried to deal with them in our work.
This kind of operation was not available in the Czech Republic and the íirst goal of our work was to implement this surgical program in its complexity - including anaesthesia and intensive postoperative care. In 2004, a PEA program was launched at the Cardiocenter of the General Teaching Hospital in Prague in eo-operation with a prominent institution ot' world renowned doctor in the field (Prof. Mayer, university in Mainz, Germany). Since September 2004 until April 2008 we operated on a total of 80 patients from Czech and Slovák (9 pts) with a mortality of 5 per cent.
Another goal of our work was to develop an anaesthetic method providing the most haemodynamic stability with the shortest duration of artificial ventilation possible. Having previous experience with high thoracic epidural anaesthesia (HTEA) used in other cardiosurgical, patients we designed a pilot study comparing two types of anaesthesia in order to find out whether HTEA might be beneficial for such type of patients. Our study has shown that combined epidural + generál anesthesia is a safe and potentially beneficial anaesthetic option in patients who are selected for pulmonary endarterectomy. It can provide the same hemodynamic stability as total intravenous anesthesia, and moreover contributes to significant shortening of intubation postoperatively, though this has not been shown to decrease either length of intensive care unit stay or mortality.
The finál goal of our work was to solve the problém of profound hypotension occurring in our patients following the extended period of extracorporeal circulation with deep hypothermic cardiac arrest. Sometimes a norepinephrin-resistant vasodilatory shock may evolve. Based on our retrospective study of 27 patients in whom we administered an additive vasopressor - Terlipressin (a prodrug on natural pituitary hormone Vasopressin) in such haemodynamic situation, we started to administer it in PEA patients too. In our survey we proved that short off-label continuous Terlipressin administration may be beneficial in patients with a pathological vasodilatation which emerged during or early after the extracorporeal circulation. Substitution of the hormone deficiency seems to be sufficient to help to restore pressure control balance.
However we were unsuccessful at using hormone substitution in patients who developed refractory hypotension during sepsis. Therefore we cannot recommend TP infusion in patients in severe hypotension related to sepsis as it proved to be haemodynamically ineffective and may even worsen the circulatory

situation.
It is our opinion that the PEA program is beneficial not just for this selected group of patients. Thanks to it we improved our skills and knowledge concerning anaesthesia and intensive care of patients in chronic right ventricle failure. Last but not least, functioning of such complicated program requiring coordinated team work not only extends a spectrum of operations, but also enhances a prestige of the whole Cardiocenter, and brings opportunities to present our work at professional events and publish in journals.