

## The operability evaluation of chronic thromboembolic pulmonary hypertension

Hui-li Gan, MD, Jian-qun Zhang, MD, Cardiac Surgery Department, Beijing Anzhen Hospital, and Capital Medical University (BAZH—CMU), & Beijing Institute of Heart, Lung and Blood Vessel Disease, Beijing 100029, China (Fax: 86-10-62244207, Email: [ganhuili@hotmail.com](mailto:ganhuili@hotmail.com)).

[Abstract]: **Objective:** the objective was to find parameters defining the inconsistency between the surgical assessable chronic thromboembolic pulmonary hypertension (CTEPH) lesion and pulmonary vascular resistance (PVR). **Method:** 106 cases of surgical accessible CTEPH admitted into Anzhen Hospital from March 2002 to January 2011 were retrospectively reviewed and were classified as operable group (Group A, n=94) or inoperable group (Group B, n=12). The occluded pulmonary segments (OPS) were assessed through ventilation/perfusion scintigraphy, and PVR were measured through right heart catheterization, and the ratio of PVR/OPS was calculated. Members from Group A received pulmonary thromboendarterectomy (PTE). **Result:** There were three (3.19%) early deaths post the PTE procedure. With mean follow-up of (45.8 ± 31.1) months, there were three late deaths; the actuarial survival at five years was (94.9±3.3) %. The PVR and PVR/ OPS in Group B were significantly higher than that in Group A. The PVR/OPS of early death and late death after PTE procedures were significantly higher than that of early survivor and late survivor respectively. PVR/ OPS <100 dynes.s.cm<sup>-5</sup>/ OPS has a much better specificity than PVR (92.1% vs. 69.3%), and also a much better sensitivity than PVR (100% vs. 33.3%). The difference among the two AUCs under their ROC curves reached a statistical significance (z test, Z= 1.9917, P= 0.046). **Conclusion:** To define operability of surgical accessible CTEPH, PVR/ OPS have a much better specificity, sensitivity, and AUCs than PVR. PVR/ OPS may serve as a new classifier for the CTEPH operability.

**Key word:** chronic thromboembolic pulmonary hypertension (CTEPH), pulmonary thromboendarterectomy (PTE), pulmonary vascular resistance (PVR), occluded pulmonary segments (OPS)