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<Objective>
Pentraxin3(PTX3) is a protein which belongs to a pentraxin family, and has various effects on innate immunity. It also has effects on angiogenesis and blood vessel repair/remodeling with gathering attractions as a disease marker of angina pectoris, acute myocardial infarction, heart failure, arthritis. Recently it was reported to be a biomarker for the pulmonary arterial hypertension associated with collagen disease, but there is no reports about the relation between PTX3 and chronic thromboembolic pulmonary hypertension(CTEPH). Here we investigate the diagnostic value of PTX3 in patients with CTEPH.
<Method>
We measured plasma PTX3 levels in 66 patients who were reffered to chiba University hospital, chiba, japan, and diagnosed with CTEPH from 2001 to 2013. All patients were examined using lung ventilation–perfusion scans, right-hert catheterization and pulmonary angiography to confirm the diagnosis. Patients with CTEPH were difened as those having a mean pulmonary arterial pressure of ≧25mmHg with normal wedge pressure who had dyspnea during a period of≧6months on effective anticoagulation. The disease control group consisted of patients after acute pulmonary embolism (PE) more than three months with no symptoms, matched for sex and age.
We sampled the blood at their first diagnostic RHC (CTEPH group), or at routine medical consultation (disease control group). The study protocol was approved by the institutional review board of the Chiba University (approval number1248), and the written informed concent was obtained from all participating patients.
＜Result>
The mean age (±standard deviation) of the 66 patients (15 men and 51 women) was 59.3±11.3 years and that of disease control group (3 men and 10 women) was 63.1± 14.4 years. All patients were Japanese. The mean period from the onset of the symptoms was 38.7 month(CTEPH group), and the mean period from the event of acute PTE was 58.6 month (control group).
The mean value of PTX3 (ng/ml) is 5.59±4.63 in CTEPH group, 1.75±0.40 in control

group. Not PTX3 value itself but the log-transformed PTX3 fit to the normal distribution (Shapiro-Wilk test). The log-PTX3 level is higher in CTEPH group than that in control group (unpaired t-test, $p<0.001$). There is no linear significant correlation between PTX3 and BNP, hemodynamic parameters (mean pulmonary artery pressure, pulmonary vascular resistance, cardiac index (CI)). However, relatively high plasma PTX3 level is observed in low CI group.

<Conclusion>

It is observed that the patients with CTEPH has higher plasma PTX3 level than clinically stable patients after PE. High plasma PTX3 level in clinically stable period after PE might need further work-up for CTEPH.