Hubungan resistensi vaskular paru pra operasi dengan perbaikan fungsi jantung kanan pasca operasi stenosis mitral rematik = Correlation between pre operative pulmonary vaskular resistance and improvement of right ventricle function post rheumatic mitral stenosis surgery

Dewi Maria Ulfa, author

Abstrak

[ABSTRAK
Latar belakang. Pada stenosis mitral sering timbul komplikasi hipertensi pulmoner dan disfungsi ventikel kanan. Belum ada penelitian yang menghubungkan antara resistensi vaskular paru sebelum operasi dengan fungsi jantung kanan saat pasca operasi serta perubahannya pasca operasi stenosis mitral rematik.
Metode. Studi ini merupakan studi kohort prospektif pada 31 pasien stenosis mitral rematik yang menjalani operasi katup mitral di Rumah Sakit Jantung dan Pembuluh Darah Harapan Kita sejak April 2014 sampai Maret 2015. Pasien menjalani pemeriksaan ekokardiografi sebelum operasi, sebelum pulang perawatan pasca operasi serta saat follow up mid term di poliklinik. Dilakukan analisa statistik untuk melihat hubungan antara resistensi vaskular paru (RVP) pra operasi dengan strain longitudinal ventrikel kanan saat follow up mid term serta perubahan strain longitudinal ventrikel kanan pasca operasi (delta strain).
Hasil. Tidak terdapat korelasi antara RVP pra operasi dengan strain longitudinal speckle tracking ventrikel kanan saat follow up mid term pasca operasi (r 0,199 p 0,264) serta dengan perubahan strain longitudinal ventrikel kanan pasca operasi atau delta strain (r 0,174 p 0,350).
Kesimpulan. Resistensi vaskular paru pra operasi tidak berhubungan dengan strain longitudinal speckle tracking ventrikel kanan saat follow up mid term pasca operasi serta dengan perubahan strain longitudinal ventrikel kanan pasca operasi atau delta strain.
<hr>
ABSTRACT
Background. In MS right ventikel (RV) dysfunction and pulmonary hypertension often occur as complication. There is no research that connects the pulmonary vascular resistance before surgery with RV function and its changes in the case of rheumatic mitral stenosis who underwent mitral valve surgery.
Methods. This study is a prospective cohort study which involves 31 patients with rheumatic mitral stenosis who underwent surgery at National Cardiovaskular Center Harapan Kita Hospital from April 2014 to March 2015. Patients underwent echocardiography before surgery, after surgery pre-hospital discharge and mid-term follow-up at clinic. Statistical analysis was performed to see the relationship between preoperative pulmonary vascular resistance (PVR) with RV function at mid term follow up, which is assessed using echocardiographic parameters right ventricular longitudinal speckle strain, and also with right ventricle longitudinal speckle strain postoperative changes (delta strain).
Results. There is no correlation between pre operative PVR with RV longitudinal speckle strain at mid term follow-up (r 0,199 p 0,264), and post operative changes or delta strain (r 0.174 p 0.350).
Conclusion. RVP before surgery is not associated with right ventricle longitudinal speckle strain at follow up mid term and post operative changes or delta strain., Background. Acute rheumatic fever and rheumatic heart disease is still regarded as an

important public health problem especially in developing countries. Mitral stenosis (MS) is a sequale of rheumatic fever which are most commonly found. In MS right ventikel (RV) dysfunction and pulmonary hypertension often occur as complication. The right ventricle has a smaller muscle mass so it is more sensitive to changes in pressure loads. There is no research that connects the pulmonary vaskular resistance before surgery with RV function and also changes in the case of rheumatic mitral stenosis who underwent mitral valve surgery.
Methods. This study is a prospective cohort study which involves 31 patients with rheumatic mitral stenosis who underwent surgery at National Cardiovaskular Center Harapan Kita Hospital from April 2014 to March 2015. Patients underwent echocardiography before surgery, after surgery pre-hospital discharge and mid-term follow-up at clinic. Statistical analysis was performed to see changes in RV function with longitudinal speckle strain, after surgery pre-hospital discharge and mid-term follow-up at clinic. Analysis also performed to see the relationship between preoperative pulmonary vascular resistance (PVR) with RV function at mid term follow up, which is assessed using echocardiographic parameters right ventricular longitudinal speckle strain, and also with right ventricle longitudinal speckle strain postoperative changes (delta strain).
Results. Right ventricular function after surgery seen with longitudinal speckle strain improved from -12.94 ± 3.63 preoperatively into -13.06 ± 3.63 after surgery pre hospital discharge, and -15.25 ± 3.75 at follow-up evaluation (p 0.007). There is no correlation between pre operative PVR with longitudinal speckle strain at mid term follow-up (r 0,199 p 0,264), and RV longitudinal speckle strain post operative changes or delta strain (r 0.174 p 0.350).
Conclusion. After mitral valve surgery, right ventricle longitudinal speckle strain improves. RVP before surgery is not associated with right ventricle longitudinal speckle strain at follow up mid term and right ventricle longitudinal speckle strain post operative changes or delta strain.]