

Perbandingan luaran operasi antara teknik minimal invasif dan konvensional pada pembedahan katup mitral di RS Jantung Nasional Harapan Kita = Outcome comparison minimal invasive versus conventional technique in mitral valve surgery at National Cardiovascular Center Harapan Kita

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Abstrak

Latar belakang : Selama beberapa dekade terakhir, popularitas operasi katup mitral dengan metode minimal invasif (MI) telah berkembang. Tujuan dari penelitian ini adalah untuk membandingkan metode operasi minimal invasif dan konvensional. Banyak penelitian menunjukkan keuntungan penggunaan metode minimal invasif, seperti mengurangi rasa sakit pasca-operasi, mempercepat waktu pemulihan pasca-operasi, antara lain durasi lama rawat di ICU, durasi total lama perawatan di rumah sakit. Untuk itu diperlukan suatu penelitian untuk mengetahui luaran antara metode operasi minimal invasif dan konvensional pada kasus pembedahan katup mitral.

Metode : Desain penelitian ini adalah potong lintang komparatif, membandingkan luaran teknik operasi minimal invasif dengan konvensional. Luarannya yang diamati adalah lama rawat pasca-operasi, antara lain durasi lama rawat di ICU dan durasi total lama perawatan di rumah sakit, skor nyeri pasca operasi, jumlah perdarahan, dan lama durasi klem silang aorta dan CPB.

Hasil : Distribusi usia pada kelompok minimal invasif antara 40-49 tahun, sedangkan pada kelompok konvensional antara 50-59 tahun. Jenis kelamin lebih didominasi oleh laki-laki. Rata-rata durasi cross klem (AOX) pada kelompok minimal invasif 99.85 menit, sedangkan durasi CPB 133.87 menit. Rata-rata waktu cross klem (AOX) kelompok konvensional 89.49 menit dan durasi CPB 112.62 menit. Berdasarkan statistik penelitian sebelumnya, tidak ada perbedaan penggunaan AOX pada kedua kelompok yang dibandingkan ($p=0.145$). Pada minimal invasif diperoleh 40 subjek dengan NYHA functional class III dan 16 subjek dengan NYHA functional class IV, sedangkan pada kelompok konvensional diperoleh 35 subjek dengan NYHA functional class III dan 12 subjek dengan NYHA functional class IV. Pada data penelitian ini terdapat 11 subjek (10.7%) yang mempunyai EF kurang dari 55%, sedangkan sisanya (89.3%) EF dalam keadaan normal (55-80%). Pada kelompok minimal invasif rata-rata jumlah perdarahan intra-operatif adalah 273 cc, sedangkan pada kelompok konvensional 660 cc. Rata-rata lama penggunaan intubasi pada minimal invasif adalah 25,34 jam, sedangkan pada konvensional 42,87 jam. Rata-rata lama penggunaan drain pada minimal invasif adalah 2,68 hari, sedangkan pada konvensional 3 hari. Rata-rata lama rawat di ICU pada minimal invasive 1,36 hari, sedangkan pada konvensional 2,96 hari. Dari data statistik ini rerata perawatan di ICU ini memiliki perbedaan yang bermakna/strongly significant ($p<0.05$). Nyeri pasca-operasi pada minimal invasif rata-rata pada VAS skala 4, sedangkan pada konvensional pada skala VAS 6-7. Rata-rata panjang insisi operasi pada minimal invasif 4 cm dan konvensional 12 cm. Rata-rata lama rawat total di rumah sakit pada minimal invasif 6,68 hari, sedangkan pada konvensional 8,91 hari.

Simbulan : Secara keseluruhan, metode minimal invasif lebih superior daripada metode konvensional, kecuali pada durasi penggunaan CPB.

Background: Over the last decade, Minimally Invasive (MI) mitral valve surgery has grown in popularity. The purpose of this study was to compare the minimally invasive and conventional surgery. Many studies showed minimally invasive mitral valve surgery appeared to offer certain advantages, such as reduced postoperative pain and faster postoperative recovery time, which is faster ICU stay and hospitalize duration. This required a study to determine the output of the surgery between minimally invasive and conventional for the case of mitral valve surgery.

Methods: The study design was comparative cross-sectional, comparing the output of minimally invasive surgery with conventional techniques. The output were postoperative recovery time, such as ICU and hospitalize length of stay, postoperative pain scores, amount of bleeding, duration of aortic cross clamp and cardiopulmonary bypass time.

Results: The range of age in minimally invasive group was between 40-49 years old, whereas the conventional group was between 50-59 years old. Sex was dominant male. The mean time of cross clamp (AOX) in minimally invasive group was 99.85 minutes, whereas CPB time was 133.87 minutes. The mean time cross clamp (AOX) in conventional technique group was 89.49 minutes, whereas CPB time was 112.62 minutes. Based on previous statistic study, there was no differences were obtained in AOX time ($p = 0.145$). In minimally invasive group, there were 40 subjects with NYHA functional class III and 16 subjects with NYHA functional class IV, whereas in conventional technique group there were 35 subjects with NYHA functional class III and 12 subjects with NYHA functional class IV. There were 11 subjects (10.7%) with EF less than 55%, whereas 89.3% subjects with normal EF (55-80%). In minimally invasive group, the mean intra-operative bleeding was 273 cc, whereas in the conventional was 660 cc. The mean length of a minimal invasive intubation was 25.34 hours, whereas the conventional technique group was 42.87 hours. The mean duration of the using of drain in minimally invasive group was 2.68 days, whereas the conventional was 3 days. The mean of the length of ICU stay in minimally invasive was 1.36 days, whereas the conventional was 2.96 days. Based on statistic result, there was a meaningful/statistically significant on the mean of the length of stay in the ICU ($p < 0.05$). The mean postoperative pain in minimally invasive group was on VAS scale 4, whereas in conventional group was on VAS scale 6-7. The mean of length incision on invasive surgery group was 4 cm and 12 cm in conventional group. The mean of length of stay in hospital in minimal invasive group was 6.68 days, whereas the conventional group was 8.91 days.

Conclusion: Overall, minimally invasive method was superior compared to conventional technique, except on the length of duration CPB use.