

Physician - Coronary Artery Diseases and Surgery

[MSB-32]

Comparison of Platelet Changes Between Mini-Extracorporeal Circulation and Conventional Cardiopulmonary Bypass

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Objective: This study aimed to evaluate the efficacy of mini-extracorporeal circulation (MECC) in reducing platelet damage compared to conventional cardiopulmonary bypass (CCPB).

Methods: Sixty-seven patients (52 males, 15 females; mean age: 63.04 ± 8.08 years) who underwent isolated coronary artery bypass grafting between August 2022 and February 2024 were retrospectively analyzed. The patients were divided into two groups: CCPB (n=37) and MECC (n=30). Demographic data, comorbidities, operative variables, laboratory values, and drainage volume data were collected from electronic medical records.

Results: No significant difference in median drainage volume was found between the MECC group and the CCPB group (300 mL vs. 350 mL; $p=0.178$). There was no statistically significant difference between the groups regarding cardiopulmonary bypass time and cross-clamp time ($p=0.160$ and $p=0.158$, respectively). There was no significant difference between the groups in preoperative and postoperative platelet counts ($p=0.687$ and $p=0.335$, respectively). The mean decrease in postoperative platelet count was $0.89 \pm 3.99\%$ in the MECC group and $13 \pm 2.98\%$ in the CCPB group. The difference in platelet count change between the groups was found to be statistically significant ($p=0.028$).

Conclusion: This study suggests that mini extracorporeal circulation significantly reduces postoperative platelet decline compared to conventional cardiopulmonary bypass, indicating its potential to better preserve platelet levels.

Keywords: Conventional cardiopulmonary bypass, mini-extracorporeal circulation, platelet count.

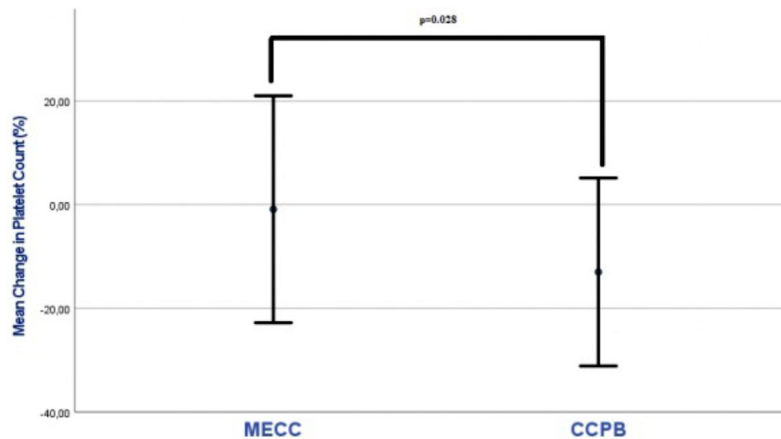


Figure 1. The difference in platelet count change between the groups.