

## POLYMORPHISM OF ANGIOTENSIN CONVERTING ENZYME MODULATE POSTOPERATIVE CLINICAL OUTCOMES AFTER CARDIAC SURGERY.

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**Introduction:** Angiotensin-converting enzyme (ACE) is under genetic control. The insertion/deletion (I/D) polymorphism of ACE is closely related to many disorders such as ARDS, arteriosclerosis, ischemic heart disease and stroke. We thus tested the hypothesis that the difference of I/D polymorphism strongly modulate postoperative clinical outcomes after cardiac surgery.

**Methods:** Hundred and ten patients undergoing elective cardiac valve surgery under cardiopulmonary bypass were divided into 2 groups postoperatively; groups with II and non-II (ID and DD) genotypes. Anesthetic management was strictly standardized. Preoperative patients' data (age, sex, body weight, NYHA score, medication, biochemical data, and comorbid disorders), anesthetic management (blood pressure, heart rate, blood loss and transfusion, and cardiorespiratory complications and their treatment), and postoperative outcome (life-threatening complications, nosocomial infections, reintubation/reoperation, death, and duration of ICU stay and hospitalization, cardiovascular and stroke incidents after discharge) were recorded. ACE ID was detected by conventional polymerase chain reaction.

**Results:** Distribution of ACE ID in II, ID, and DD genotypes was 29%, 59%, and 12%, respectively. The non-II group had significantly greater postoperative blood loss and transfusion ( $P < 0.05$ ), more common postoperative infections, and longer ICU stay duration than the II group ( $P < 0.01$ ). Non-II group had significantly higher risk of post-discharge cardiovascular and stroke incidents ( $P < 0.01$ ). No differences were observed in other perioperative data between the 2 groups.

**Conclusion:** Postoperative and post-discharge worst incidents were recognized in patients with the D allele after cardiac valve surgery. Our results strongly suggest that ID polymorphism can predict the subsequent development of postoperative complications.