

6th International Conference on

CARDIOLOGY AND CARDIOVASCULAR MEDICINE

June 19-20, 2019 | Dublin, Ireland

GLOBAL CARDIOLOGY CONGRESS 2019



SCIENTIFIC TRACKS & ABSTRACTS DAY 1

DAY 1 SESSIONS

JUNE 19, 2019

Arrhythmia | HeartFailure

SESSION CHAIR

Christophe Pellegrino
Aix Marseille University, France

SESSION INTRODUCTION

Title: Clinical outcomes of robotic mitral valve repair: A single-center experience in South Korea, updated version

Jae Won Lee, Asan Medical Center, South Korea

Title: An increase in CO₂ levels by upregulating late sodium current is proarrhythmic in the heart

Lin Wu, Peking University First Hospital, China

6th International Conference on CARDIOLOGY AND CARDIOVASCULAR MEDICINE

June 19-20, 2019 | Dublin, Ireland

Jae Won Lee, J Cardiovasc Med Ther 2019, Volume 3

CLINICAL OUTCOMES OF ROBOTIC MITRAL VALVE REPAIR: A SINGLE-CENTER EXPERIENCE IN SOUTH KOREA, UPDATED VERSION

Jae Won Lee

Asan Medical Center, South Korea

Background: Since the inception of robotic mitral valve repair (MV) in 2007 at author's institution, it has become an acceptable surgical option with proven efficacy and safety. The objective of this study is to analyze the early and long-term clinical outcomes of patients undergoing robotic MV repair.

Methods: A total of 450 patients (aged 49.8±13.6 years, 295 females) undergoing robotic MV repair using the da Vinci system (Intuitive Surgical Inc., Sunnyvale CA) between August 2007 and September 2018 in our institution were evaluated. The preoperative demographics, operative profiles and postoperative outcomes including follow-up echocardiographic results were analyzed.

Results: Successful MV repair was achieved in 98.2% (n=442) of patients, with no significant residual mitral regurgitation (MR) postoperatively. There were no early postoperative deaths. Early postoperative complications included: stroke (n=5, 1.1%), new onset dialysis (n=1, 0.2%) and reoperation (n=3, 0.7%). During a median follow-up of 46.9 months (inter-quartile range 21.6 to 701.6 months), 8 patients died, while 5 patients underwent late reoperations. Major event-free survival at 5 years was 85.3% (0.81-0.90). Late echocardiographic profiles (>6 months) were obtained in 407 (90.4%) patients. During follow-up, 55 patients developed significant mitral regurgitation (MR > grade 2), while freedom from significant MR at 5 years was 84.0% (0.80-0.89).

Conclusions: Robotic MV repair is a safe procedure with acceptable postoperative results, including low early postoperative morbidity and mortality and acceptable long-term repair durability.

BIOGRAPHY

Jae Won Lee studied and graduated at the Seoul National University college of Medicine, South Korea. He was trained at the Seoul National University Hospital and received his PhD degree at the same institution. He also received clinical fellowship training at the Toronto General Hospital supervised by Dr. Tirone E David. He has published more than 180 research articles in SCI (E) journals.

jwlee@amc.seoul.kr



Note:

6th International Conference on **CARDIOLOGY AND CARDIOVASCULAR MEDICINE**

June 19-20, 2019 | Dublin, Ireland

Lin Wu, J Cardiovasc Med Ther 2019, Volume 3

AN INCREASE IN CO₂ LEVELS BY UPREGULATING LATE SODIUM CURRENT IS PROARRHYTHMIC IN THE HEART

Lin Wu

Peking University First Hospital, China

Increased CO₂ levels in general circulation and/or in the myocardium are common under pathological conditions. To test the hypothesis that an increase in CO₂ levels, but not just the subsequent extra- or intra-cellular acidosis, would augment late sodium current (I_{Na,L}) and contribute to arrhythmogenesis in hearts with reduced repolarization reserve. Monophasic action potential durations at 90% completion of repolarization (MAPD90) from isolated rabbit hearts, I_{Na,L} and extra- (pH_o) and intra-cellular pH (pH_i) values from cardiomyocytes using the whole-cell patch-clamp techniques and BCECF-AM respectively, were measured. Increasing CO₂ level from 5% to 10% and 20% and administration of 1 nM sea anemone toxin (ATX)-II increased I_{Na,L} and prolonged both epi- and endo-MAPD90 (n=7 and 10) without causing arrhythmic activities. Compared to 5% CO₂, 10% and 20% CO₂ decreased pH_o and pH_i, in hearts treated with 1 nM ATX-II caused a greater prolongation of MAPD90 and elicited ventricular tachycardias. Increasing CO₂ levels from 5% to 10% and 20% with pH_o remained at 7.4 produced smaller changes in pH_i (P <0.05) but similar increase in I_{Na,L} prolongation in MAPD90 and incidence of ventricular tachycardias (n=8). Inhibition of I_{Na,L} reversed the increase in I_{Na,L} suppressed MAPD90 prolongations and ventricular tachycardias induced by 20% CO₂. Increased phospho-CaMKIIδ and phospho-NaV1.5 protein levels in hearts treated with 20% CO₂ was attenuated by eleclazine. In conclusion, increased CO₂ levels enhance I_{Na,L} and are proarrhythmic factors in the heart with reduced repolarization reserve, possibly through mechanisms related to the phosphorylations of CaMKIIδ and NaV1.5.

BIOGRAPHY

Lin Wu received his MD Degree from Beijing Medical University, completed his Postdoctoral training at the University of Florida and worked as a Senior Research Scientist at CV Therapeutics and Gilead Sciences in California, USA. Now he is a full-time Professor and Chief Physician at Department of Cardiology, Peking University First Hospital, China. He has made important contributions to our understanding of the role of endogenous and enhanced late sodium current in ventricular and atrial arrhythmias. He has in-depth experience in cardiac electrophysiology, especially in late sodium current-associated cardiac arrhythmias and myocardial ischemia, evidenced by 36 world-circulated reputed journals and over 34 presentations at international scientific conferences.

lin_wu@163.com



Note: