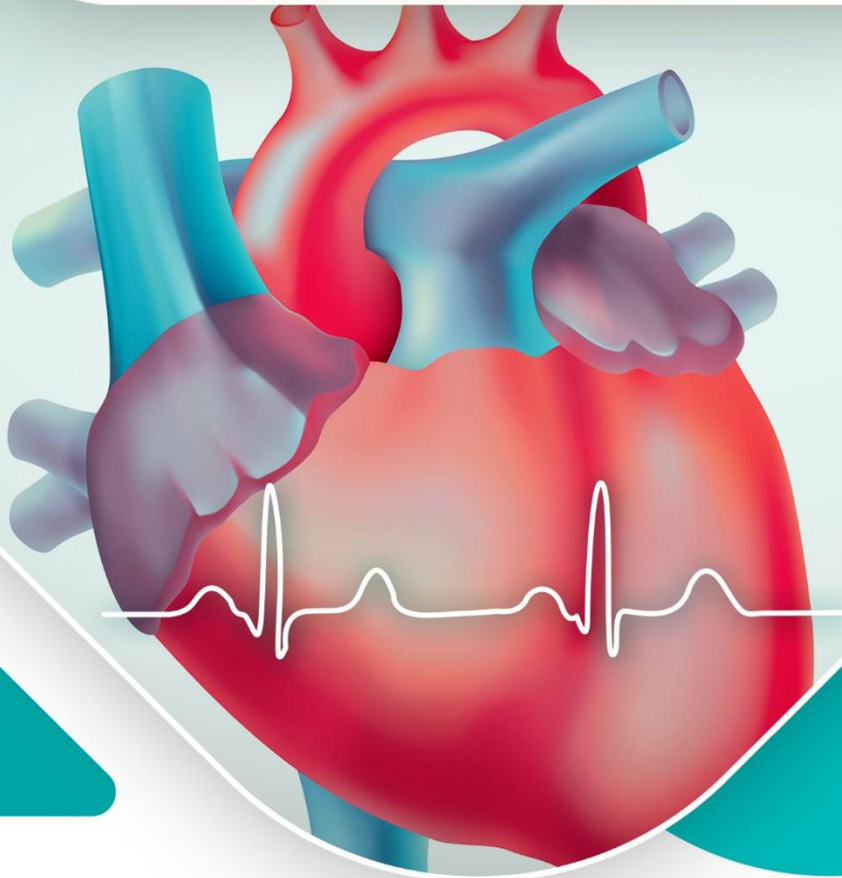




DIGITAL  
**30<sup>th</sup> As*♥*iha**  
Annual Scientific Meeting of Indonesian Heart Association



**15-23 Oktober 2021**



# PROCEEDING BOOK

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# PROCEEDING BOOK

The 30th Annual Scientific Meeting of Indonesian Heart Association (ASMIHA)

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## INDONESIAN HEART ASSOCIATION PRESIDENT FOREWORD



Greeting colleague,

Greeting colleague,

It was a great pleasure for me to welcome you all to the 30<sup>th</sup> Annual Scientific Meeting of the Indonesian Heart Association (ASMIHA). The meeting has become one of the most significant cardiology events this year. The forum is jointly organized by The 2<sup>nd</sup> Indonesian Society of Cardiovascular Imaging Annual Meeting (ISCI) and The 3<sup>rd</sup> Indonesian Annual Congress of Congenital Heart Disease (INACHD), 15–23 October 2021.

This meeting was disseminated the latest research results and findings to discuss with experts, academia, medical practitioners and also a researcher. A backward-looking since 2003, *Cardiology Update* has changed the name became ASMIHA, we see the participation in this meeting has increased significantly over the years. In 2021, as we celebrate the 30<sup>th</sup> year of ASMIHA, the organizing committee would to enrich knowledge-sharing forum and stimulate advanced research findings. Indonesian Heart Association and Organizing Committee of 30<sup>th</sup> ASMIHA looks forward to provide an opportunity for participants to revisit key takeaways from the experts through this proceeding The 30<sup>th</sup> ASMIHA.

We would like to express our sincere appreciation to all experts for their invaluable support for this meeting. We sincerely hope that the Proceeding will be a useful reference for all readers to expand their knowledge and push ahead with advanced research findings.

**Isman Firdaus, MD, PhD**

President of Indonesian Heart Association

## 30<sup>th</sup> ASMIHA CONGRESS CHAIRPERSON FOREWORD



Greeting colleague,

On behalf of the 30<sup>th</sup> Annual Scientific Meeting of Indonesian Heart Association (ASMIHA) Committee, we would like to acknowledge all parties who have taken part and participated in this event. The 30<sup>th</sup> ASMIHA 2021 was successfully held in-conjunction with the 2<sup>nd</sup> Indonesian Society of Cardiovascular Imaging (ISCI) Annual Meeting and the 3<sup>rd</sup> Indonesian Annual Congress of Congenital Heart Disease (INACHD). Months of preparation involving hundreds of experts around the world, various international cardiovascular and medical societies, and joined by thousands of participants has once again proven the prestige of ASMIHA, originally known as 'Cardiology Update', as the biggest cardiovascular conference in Indonesia since 1989.

This program is formulated to accommodate participants from different backgrounds ranging from medical students until sub-specialists. The limitation to congregate set by COVID-19 pandemic was put aside by adapting the format of this event into a digitalized platform. Furthermore, in doing so, the committee believes a wider selection of topics can be presented that is accessible to participants joining from all over the world.

As the final project, we have prepared a proceeding compilation of the topics presented in ASMIHA 2021. Thank you to all faculties for their time, effort, and expertise in the creation of this proceeding. Hopefully, it may extend our reach in sharing the knowledge that was gathered to all regions in Indonesia and even globally. See you on the event next year!

**Ario Soeryo Kuncoro, MD**

Congress Chairperson of the 30<sup>th</sup> ASMIHA

## CHAIRPERSON OF 30<sup>th</sup> ASMIHA SCIENTIFIC COMMITTEE FOREWORD



Dear colleague,

The 30th ASMIHA was successfully held for 9 days from 15th until 23rd October 2021. A virtual gathering of many cardiologists and medical practitioners from various expertise to share their insights and experiences. With more than 90 symposium and workshop sessions prepared, we hope the whole experience was as eventful for you as it was for the committee formulating them.

Through this proceeding, we would like to share some of the issues that were discussed. The proceeding comprised more than 100 topics from 20 chapters ranging from basic clinical examination to the recent study of COVID-19 pandemic impacts on cardiovascular health. Thank you to all colleagues, and especially the proceeding committee, for their time and effort that helped this proceeding to be published. We believe the medical field will always evolve and thus, the committee welcomes any suggestion and feedback to improve it even further.

Once again, thank you for all your participation and support. We hope this event will keep contributing to the development of the cardiovascular field in Indonesia.

**Dian Zamroni, MD**

Chairperson of 30th ASMIHA Scientific Committee

## CHAIRPERSON OF 30<sup>th</sup> ASMIHA PROCEEDING BOOK FOREWORD



Greeting colleagues,

First of all, I am so grateful to Allah SWT for giving us the ability to finish the Proceeding of 30th ASMIHA 2021 within a short period of preparation. The sole purpose of this proceeding is to spread knowledge to a greater extent and longer period. Presentation in a scientific meeting, such as this 30th ASMIHA is one form of knowledge sharing. Unfortunately, this format was limited to participants who attended the meeting or who recorded the presentation. Therefore, we provide another platform where experts from various fields may impart their wisdom and experiences with others. As life-long learners, medical practitioners must keep being updated with the many developments that have been agreed upon or is under researched.

Over 20 chapters and 100 topics were being discussed in-depth by experts in their respective field. Hopefully, the readers may find some interesting issues that piqued their curiosity and by doing so, we are hopeful that more scientific questions and research may take place after this conference aimed to optimize patients' experience.

I personally would like to show my appreciation to all committee, authors, and contributors that has made this proceeding possible. To never stop learning and asking questions is the way to keep improving ourselves, as knowledge increases by sharing and not by saving them.

**Sunu Budhi Raharjo, MD, PhD**

Editor-in-Chief of 30th ASMIHA Proceeding Book

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## CATHETER ABLATION OF ATRIAL FIBRILLATION IN THE SETTING OF HEART FAILURE: HOPE OR HYPE? (PROS)

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### ABSTRACT

Atrial fibrillation and heart failure are two closely related clinical situations that cardiologists often deal with. The natural course of these two diseases often occurs simultaneously, but in most daily clinical practice we might be able to determine which diagnosis came first, thus causing the next diagnosis to occur. The combination of these two does not only affect mortality but the quality of life will also be affected. Of course, it is ideal if it can be stopped one of the two so that it does not continue to a more severe condition. That is why knowing the presence of atrial fibrillation in patients with heart failure is important, vice versa. Management of patients with heart failure and atrial fibrillation remains needs a specific approach. Rhythm restoration using antiarrhythmic drugs possess several disadvantages in low ejection fraction. However, several trials showed that ablation of atrial fibrillation might improve quality of life, reduce HF hospitalizations, and reduce death, provided the LVEF is at least 25% or higher.

### INTRODUCTION

There is an increasing incidence of atrial fibrillation (AF) around the globe. The prevalence of atrial fibrillation is increased by age. Similarly, heart failure is also a global burden and one of the highest causes of death worldwide. Age has roughly affected the incidence of heart failure. Atrial fibrillation increases the adverse outcome in any stage of heart disease, including in patients with heart failure whether preserved or reduced ejection fraction. Atrial fibrillation tends to have a higher heart rate, whilst in heart failure, we need to reduce the myocardial oxygen consumption by reducing it. These two combinations are clinical situations that almost all cardiologists faced in real-world practice which required better management for improving the prognostics. The term AF begets heart failure, vice versa, explain complex relation which makes things worse each other.

### ATRIAL FIBRILLATION AND HEART FAILURE RELATIONSHIP

Research had become dynamic in the context of the pathophysiological relationship between AF and heart failure. The development of heart failure in a patient with atrial fibrillation could occur in several ways. Physical activity or exercise will increase heart rate which resulted in a shorter diastolic filling time leading to reduce cardiac output, in the presence of atrial electrical remodeling coupled with structural atrial remodeling will further decrease the cardiac output. Loss of coordinated atrial contraction also contributes, that occurred more severe in the diastolic dysfunction. Some studies showed increased NYHA class in heart failure in sinus rhythm that has new onset of atrial fibrillation. NYHA class will improve by restoring to sinus rhythm.

Heart failure accelerates atrial structural and electrical remodeling that further increased the risk of atrial fibrillation by increased atrial pressure, alterations of calcium handling, and atrial electrical properties. Neurohumoral, especially activation of the renin-angiotensin-aldosterone system in heart failure also promotes several atrial pathologies including atrial hypertrophy, apoptosis, collagen deposition and interstitial remodeling which further maintain the development the atrial fibrillation.

### CLINICAL TRIALS OF AF ABLATION IN HEART FAILURE

Restoring the sinus rhythm in heart failure with AF may significantly improve ventricular function or to some extent of cases might stop and reversed cardiac remodeling especially in the context of AF induced cardiomyopathy. These findings had sparks multiple clinical trials to restore the rhythm using pharmacological or catheter ablation into sinus rhythm in a

patient with heart failure. Pharmacological rhythm control strategy compared to rate control strategy failed to show significant improvement in primary endpoints in terms of mortality and worsening heart failure. Sub-group analysis showed that benefits from sinus rhythm maintained by drugs were offset by its significant toxicity. Further analysis, the rhythm control group in which the sinus rhythm was maintained, give results in better symptom and mortality benefits due to pump failure.

In addition, in a non-invasive approach to control the rhythm, catheter ablation provides potential benefit in maintaining sinus rhythm without the risk of the drug's side effects. Several trials such as Pulmonary Vein Antrum Isolation versus AV Node Ablation with Bi-Ventricular Pacing for treatment of Atrial Fibrillation in Patients with Heart Failure (PABA-CHF) randomized 81 patients into pulmonary vein isolation (PVI) group VS pacing and ablate strategy. This study showed PVI group was superior to the pacing and ablate strategy group in terms of morphologic, functional, and quality of life variables. Another trial named A randomized controlled trial of catheter ablation versus medical treatment of atrial fibrillation in heart failure (the CAMTAF) randomized 50 patients showed improving LV function ( $p = 0.005$ ), functional capacity and heart failure symptoms ( $p = 0.001$ ) in the catheter ablation group compared to medical rate control.

Fundamental trial in the year 2018, subgroup analysis of Catheter Ablation versus Antiarrhythmic Drug Therapy for Atrial Fibrillation (CABANA) trial was published in 2021 including 778 patients with heart failure assigned to drug therapy (400 patients) and catheter ablation (378 patients). The operational definition of heart failure in this trial was based on symptoms alone (NYHA II or worse), by which only 9.3% had an LVEF <40%, 11.7 % had an LVEF between 40. And 50% and 79% had an LVEF > 50%. Investigators concluded the improvement of reduction in mortality, reduction of AF recurrence, and improvement of quality of life in ablation group compared to drug group ('intention to treat analysis). Per protocol analysis of this finding became more significant especially in male participants, hypertension, left ventricular hypertrophy, CHADS-VASC > 2 points, BMI < 30.

The multi-center trial, parallel-group, open, blinded outcome assessment of The Early Treatment of Atrial Fibrillation for Stroke Prevention Trial (EAST-AFNET 4) randomly assigned patients with early AF (recognized AF before 1 year) and cardiovascular conditions into two groups, either rhythm control strategy (antiarrhythmic drugs or catheter ablation) or based on current guideline so-called "usual care" or rate control therapy to manage symptoms. 7 % patient shad have been performed catheter ablation, showed a lower risk of cardiovascular outcome (3.9 vs 5.0).

**Table 1.** Catheter ablation rhythm control vs medical therapy for mortality.

Study or subgroup	Ablation		Medical		Odds Ratio
	Events	Total	Events	Total	
ARC HF 2013	1	26	0	26	3.12 (0.12 – 80.12)
CAMTAF 2014	0	26	1	24	0.30 (0.01 – 7.61)
AATAC 2016	8	102	18	101	0.39 (0.16 – 0.95)
CASTLE AF 2018	24	179	46	184	0.46 (0.27 – 0.80)
CABANA HF subgroup 2019	21	174	29	163	0.63 (0.35 – 1.16)

**Table 2.** Catheter ablation rhythm control vs medical therapy for re-hospitalization.

Study or subgroup	Ablation		Medical		Odds Ratio
	Events	Total	Events	Total	
AATAC 2016	32	102	58	101	0.34 (0.19 – 0.60)
CAMERA-MRI 2017	0	33	4	33	0.10 (0.01 – 1.89)
CASTLE AF 2018	64	179	89	184	0.59 (0.39 – 0.90)

One meta-analysis performed by S Chen et al. including 11 trials of 3598 patients showed catheter ablation for rhythm control of AF had lower all-cause mortality, similar risk of stroke, fewer hospitalizations, greater improvement of LVEF and quality of life and lower AF recurrence.

## CONCLUSION

Heart failure and atrial fibrillation had a close relationship. One and another has a major impact in terms of future prognosis and warrant further specific management. Rhythm control by drug gave potential benefit in reducing mortality,

improve LV function, and quality of life. However, its benefits were offsite by its potentials side effect. Therefore, catheter ablation provides a potential benefit that produces by maintaining the sinus rhythm whilst avoiding any side effects of drugs. These findings are in line with various studies that compared catheter ablation vs drug therapy. Data from EAST AFNET 4 suggest early treatment with catheter ablation offers further benefits.

As heart failure and atrial fibrillation affect each other, manage one entity would also treating the other entity. Future conducted and comprehensive's trials will have to specify this matter, especially in heart failure with reduced ejection fraction.

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