中區心臟血管學術會

日　　期：114 年 12 月 27 日　PM 14:00～16:15

地　　點：裕元花園酒店 4 樓東側包廂（台中市西屯區台灣大道四段 610 號）

主 持 人：黃世忠醫療長（光田綜合醫院 心臟內科）

Time	Program	Speaker	Moderator
14:00~14:05	Welcome Address		張坤正會長 (中國醫大附設醫院)
14:05~14:10	Opening Address		黃世忠醫療長 (光田綜合醫院)
Special Lecture			
14:10~15:10	**Medical Treatment of Dyslipidemia in High / Very-High Cardiovascular Risk Patients (ESC/EAS 2025 Update)**	蘇峻弘主任 (中山醫大附設醫院)	黃世忠醫療長 (光田綜合醫院)
Case Report : (每病例報告 10 分鐘，討論 5 分鐘)			
15:10~15:25	Mechanical Thrombus Aspiration in Highly Tortuous and Ectatic Vessels during Acute Coronary Syndrome	黃立安醫師 (中山醫大附設醫院)	黃世忠醫療長 (光田綜合醫院)
15:25~15:40	Artificial Intelligence–Based ECG Analysis for Predicting Acute Coronary Occlusion in Patients with Non–ST-Segment Elevation Myocardial Infarction	陳家豪醫師 (中國醫大附設醫院)	
15:40~15:55	Shock, Surgical Failure, and Severe MR: How MitraClip Changes Outcomes in High-Risk Patients	鍾竣宇醫師 (台中榮民總醫院)	
15:55~16:10	Emergency Revascularization in Acute Inferior STEMI with Anomalous RCA Origin: A Sequential Culprit Strategy	楊午騰醫師 (彰化基督教醫院)	
16:10~16:15	Closing Remarks		黃世忠醫療長 (光田綜合醫院)

主辦單位：光田綜合醫院 心臟內科　　☎：(04)26625111

協辦單位：台田藥品股份有限公司　　☎：(04)23719861

學　　分：內科學分、心臟專科學分、重症醫學會學分、急救加護學分申請中。

歡迎醫藥界同仁踴躍參加!

※ 下次預定主辦醫院:中山醫學大學附設醫院　日期:114.3.14 ※

Topic:

Mechanical Thrombus Aspiration in Highly Tortuous and Ectatic Vessels during Acute Coronary Syndrome

Abstract:

The 48-year-old male had history of coronary artery disease with double vessel disease with diffuse ectasia status post plain old balloon angioplasty in 2009. He presented with non-ST-elevation myocardial infarction in August 2025. Coronary angiography was therefore arranged. Diffuse ectasia vessel with tortuosity was still found. Huge thrombus with total occlusion was seen in circumflex branch of left coronary artery, with TIMI 0 flow and collateral circulation from right coronary artery. We applied CAT RX catheter for mechanical thombus suction, along with urokinase and ballon angioplasty. Finally, left circumflex artery restored TIMI 2-3 flow, with some residual thrombus. Due to huge thrombus burden and high risk of distal emboli migration, aside from dual antiplatelet therapy, the patient will also be kept anticoagulant with Edoxaban.

黃立安

中山醫學大學醫學系

中山醫學大學附設醫院內科部住院醫師

Medical Treatment of Dyslipidemia in High / Very-High Cardiovascular Risk Patients (ESC/EAS 2025 Update)

Su, Chun-Hung M.D. Ph.D; Chung Shan Medical University Hospital

1. Treatment Goal

The main therapeutic target remains **LDL-cholesterol (LDL-C)**.

- **High risk:** LDL-C **< 70 mg/dL** (1.8 mmol/L)
- **Very high risk:** LDL-C **< 55 mg/dL** (1.4 mmol/L)
- **Extreme risk** (e.g., recurrent events despite optimal therapy): **Consider < 40 mg/dL**

Key principle: *Lower is better and earlier is better.*

2. First-Line Therapy: High-Intensity Statins

Statins are the foundation of therapy because they:

- Reduce LDL-C effectively
- Have strong evidence for **reduction in cardiovascular events and mortality**

3. Early Combination Therapy (Important Change in 2025)

Do not wait to add additional therapy if the LDL-C target is unlikely to be met with statin alone.

Start combination early, especially in:

- **Acute coronary syndrome (ACS)**
- Patients with **very high baseline LDL-C**
- Patients with **known ASCVD**

Statin + Ezetimibe

- **Ezetimibe 10 mg/day** → additional **15 – 20% LDL-C reduction**

This is now a **Class I recommendation** for high/very-high risk if statin alone is not enough.

4. PCSK9 Inhibitors

If LDL-C still above target after statin + ezetimibe:

Recommended for:

- **Patients with ASCVD not at LDL-C goal**
- **Familial hypercholesterolemia**
- **Statin intolerance** (if documented)

2025 emphasis: Use *earlier* in very-high-risk patients rather than waiting months.

5. Bempedoic Acid

A newer **oral** LDL-C lowering agent.
Useful when:

- Statin **intolerance** (muscle symptoms)
- LDL-C still above target despite statin + ezetimibe

LDL-C reduction: **~20%**

6. Treatment for Special Lipid Problems

High Triglycerides (>150 mg/dL)

- After statin optimization, consider **Icosapent Ethyl (EPA)** 2 g twice daily
- Shown to lower event rates in patients with **ASCVD + elevated TG**

Lipoprotein(a) [Lp(a)]

- Measure **once in adulthood**
- High Lp(a) = risk enhancer → treat LDL-C **more aggressively**
- New Lp(a)-lowering drugs are *pending*, not standard yet

7. Follow-Up and Therapy Adjustment

- Recheck lipids **4 – 6 weeks** after any therapy change
- Adjust stepwise to achieve target
- Reinforce lifestyle (diet, exercise, smoking cessation, weight control)

姓　　名: 蘇峻弘　　英文名字: **Chun-Hung Su**

性　　別:　男

現職單位　：中山醫學大學附設醫院心臟內科主任

中山醫學大學醫學系專任教授暨副系主任

學歷：

中山醫學大學 醫學士

中山醫學大學 臨床醫學研究所醫學碩士

中山醫學大學 臨床醫學研究所醫學博士

專科學會：

台灣內科醫學會 內科專科醫師 (91 年至今)

中華民國心臟學會 心臟內科專科醫師 (93 年至今)

中華民國重症醫學專科醫師 (94 年至今)

中華民國心臟學會 心臟內科專科醫師指導醫師 (100 年至今)

中華民國心臟學會 心臟血管介入專科醫師 (96 年至今)

中華民國心臟學會第 26 屆副秘書長 (107 年 5 月至 109 年 7 月)

中華民國心臟學會 心衰竭委員會委員 (106 年至 107 年)

中華民國心臟學會 預防醫學委員會委員 (111 年 7 月至 113 年 5 月)

台灣介入性心臟血管醫學會第 8-9 屆副秘書長 (109 年 2 月至 113 年 1 月)

台灣介入性心臟血管醫學會第 10 屆監事暨編輯委員會副主委

台灣心肌梗塞學會第 2 屆學術委員會副主委

中山醫學大學醫學系內科學科主任(109 年 8 月至 110 年 7 月)

中山醫學大學醫學系專任教授(112 年 2 月至至今)

Artificial Intelligence–Based ECG Analysis for Predicting Acute Coronary Occlusion in Patients with Non–ST-Segment Elevation Myocardial Infarction

Abstract

Acute Coronary Occlusion (ACO) is a primary cause of adverse outcomes and mortality in Acute Myocardial Infarction (AMI) patients. Early reperfusion therapy is crucial for improving prognosis. Current diagnostic criteria, relying on ST-segment elevation (STEMI) on ECG, are limited. Studies show 25-34% of NSTEMI patients have ACO but miss timely treatment due to not meeting STEMI criteria. Atypical STEMI ECGs (e.g., Hyperacute T waves, De Winter T waves) are often misdiagnosed as NSTEMI, causing delays. To address this, this study promotes "Occlusion Myocardial Infarction" (OMI) as a central classification and aims to develop an AI-based ECG model for early, accurate OMI identification in NSTEMI patients.

This study will retrospectively collect clinical data and initial emergency department ECGs from MI patients at China Medical University Hospital (2000/01/01-2025/07/31). All ECG data will undergo standardized preprocessing: denoising, baseline wander correction, R-peak detection and heart rate correction, lead alignment, and amplitude normalization. The model design explores two main approaches. First, a feature engineering-based traditional machine learning method will extract timedomain, frequency-domain, wavelet, and morphological features from ECGs using open-source tools. This will be combined with patient clinical data (e.g., age, sex, medical history) to train models like SVMs, Random Forests, or Gradient Boosting Machines. Second, an end-to-end deep learning approach will directly input raw 12-lead ECG signals. It will employ advanced architectures such as Long Short-Term Memory (LSTM) networks, Transformers, or Convolutional Neural Networks (CNNs, including 1D CNNs, ResNet-34 1D, Inception-like, DenseNet), with options for early or late fusion of clinical data. Pre-trained models and transfer learning will also be considered. Model validation will use strict patient-level data splitting (training, validation, test sets) and K-fold cross-validation for stability assessment. The primary performance metric is AUC, supplemented by sensitivity, specificity, PPV, NPV, accuracy, and F1-score. Subgroup analyses will be conducted based on age, history of heart failure, prior MI, and bundle branch block to evaluate performance across different clinical contexts. Explainable AI methods like Saliency Maps (e.g., Grad-CAM, LIME, SHAP) will visualize ECG regions influencing predictions, enhancing clinical trust and potentially discovering new diagnostic markers. Clinical impact will be assessed by comparing AI

model performance with current STEMI standards and expert interpretation, and evaluating potential reductions in reperfusion time and improvements in patient outcomes. Future work will include
external validation.

This research aims to significantly improve OMI early identification, overcoming current STEMI criteria's sensitivity limitations. It seeks to accelerate reperfusion therapy, improve patient prognosis, and support clinical decision-making, particularly in remote areas or for non-specialist physicians, by providing a standardized AI-assisted diagnostic tool, ultimately saving myocardium and reducing mortality.

CURRICULUM VITAE

Chia-Hao Chen, M.D. (陳家豪)

Division of Cardiology, China Medical University Hospital (CMUH), Taichung, Taiwan
404332, Republic of China (R.O.C.)

EDUCATION

2012 – 2019 M.D., Kaohsiung Medical University, School of Medicine, Kaohsiung, Taiwan

POSTGRADUATE TRAINING

Internship
2020 – 2022 National Taiwan University Hospital (NTUH), Taipei, Taiwan

Residency (Medical)
2022 – 2024 China Medical University Hospital (CMUH), Taichung, Taiwan

Attending Physician
2024 – present China Medical University Hospital (CMUH), Taichung, Taiwan

HOSPITAL APPOINTMENTS

2022 – present

Attending physician, Division of Cardiology, Department of Medicine, CMUH, Taichung, Taiwan

Shock, Surgical Failure, and Severe MR: How MitraClip Changes Outcomes in High-Risk Patients

臺中榮民總醫院 心臟內科 鍾竣宇

Cardiogenic shock combined with severe mitral regurgitation (MR) represents one of the most lethal scenarios in structural and heart-failure cardiology, particularly when surgical options are limited by prohibitive risk or prior operative failure. In this presentation, we explore a high-risk patient with shock, recurrent MR, and failed prior mitral surgery, an

d examine how transcatheter edge-to-edge repair (MitraClip) offers a viable rescue strategy. By reducing regurgitant volume, improving forward stroke volume, and stabilizing hemodynamics, MitraClip provides an essential therapeutic bridge—even in patients previously considered inoperable. This case highlights the clinical reasoning, procedural considerations, and post-intervention trajectory that illustrate how MitraClip can meaningfully alter outcomes in the sickest cohort of MR patients.

Curriculum Vitae

Zhong, Jun-Yu, M.D.

Institution: Cardiovascular Center, Taichung Veterans General Hospital

EDUCATION and QUALIFICATION

2015-2021 M.D., National Yang Ming Chiao Tung University, Taipei, Taiwan

2025- Board certified specialist of Taiwan Society of Internal Medicine

WORK EXPERIENCE

2021/08-2023/12 Post-graduate Year Training, Taichung Veterans General Hospital

2024/01-2025/08 Resident physician, department of Internal Medicine,
Taichung Veterans General Hospital, Taichung

2025/09-Present Chief Resident, Cardiovascular Center
Taichung Veterans General Hospital, Taichung

新進醫師

心臟內科

楊午騰 醫師

門診時間：每週一下午

學經歷

中國醫藥大學醫學系畢業
中國醫藥大學附設醫院見實習
彰化基督教醫院內科住院醫師
彰化基督教醫院內科總醫師
彰化基督教醫院心臟內科總醫師

專長

高血壓、高血脂、糖尿病、
一般心臟血管等疾病、心衰竭、
心律不整、心悸、心臟超音波、
非侵入性心臟血管生理檢查、
心臟冠狀動脈疾病

Emergency Revascularization in Acute Inferior STEMI with Anomalous RCA Origin: A Sequential Culprit Strategy

彰化基督教醫院 心臟內科 楊午騰

Abstract

A 50-year-old male without known cardiovascular disease presented with acute inferior ST-segment elevation myocardial infarction accompanied by profound bradycardia. Emergent coronary angiography was initiated; however, the right coronary artery (RCA) could not be engaged due to an anomalous ostium, prompting initial evaluation of the left coronary system. Left coronary angiography revealed total occlusion of the proximal left circumflex artery (LCX), which was rapidly identified as an immediately actionable culprit. Primary percutaneous coronary intervention (PCI) was performed to restore LCX flow under time-sensitive conditions. Subsequent meticulous catheter probing identified the anomalous RCA arising inferior to the left main coronary ostium, demonstrating critical stenosis. A second urgent PCI was successfully completed to re-establish perfusion of the RCA territory. This case illustrates a pragmatic sequential revascularization strategy in STEMI complicated by an anomalous RCA origin, emphasizing rapid identification of an accessible culprit lesion, targeted initial reperfusion, and persistent anatomical search to achieve complete revascularization in a hemodynamically vulnerable scenario.