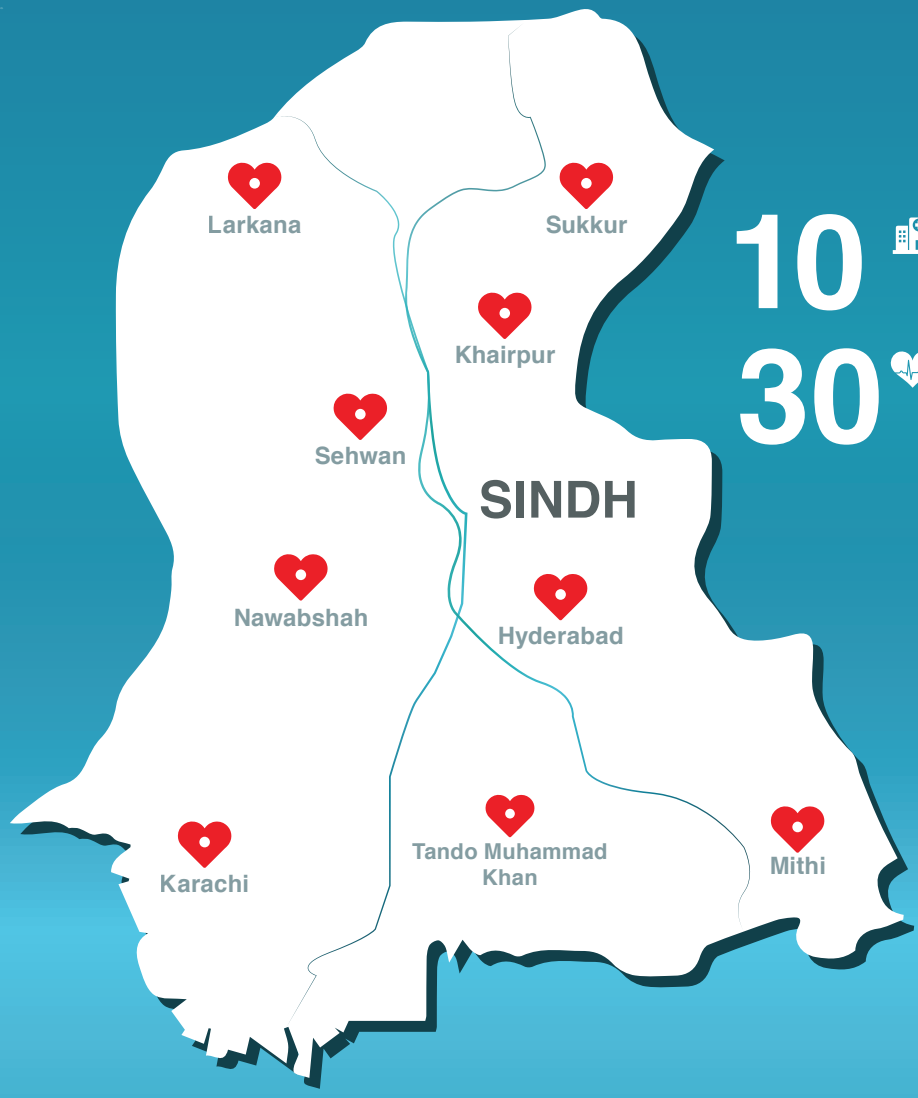
SICVD
SINDH INSTITUTE OF CARDIOVASCULAR DISEASES



10 **HOSPITALS**
Providing advanced cardiac care

30 **CHEST PAIN UNITS**
Early diagnosis.
Timely care.
Stronger communities.

THE OFFICIAL NEWSLETTER OF SICVD I VOL-1 I ISSUE-3

LIFELINE OF SINDH

Connecting Hearts Saving Lives - Across Every Beat of Sindh

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EDITORIAL

FROM THE EDITOR'S DESK

It is with great pleasure that I present the third edition of the SICVD Newsletter, a testament to our team's unwavering dedication to delivering insightful and timely updates to our esteemed readers. This edition signifies our commitment to excellence in cardiovascular care, reflecting the tireless efforts of our professionals to provide compassionate and world-class healthcare services.

The recognition and appreciation received from the community for SICVD's mission to provide hope and cardiac care to countless patients is a source of inspiration, reinforcing our vision and encouraging us to strive for excellence. We are grateful to the Government of Sindh for their steadfast support and collaborative partnership, which has been instrumental in enabling SICVD to expand its network and deliver exceptional healthcare services across the province.

I would also like to express my appreciation to our Executive Director for encouragement in bringing this edition to publication, to the Editorial Board for their diligent efforts in reviewing and refining the content, and to our Publishing Manager for his professionalism in the design and production of this newsletter.

We invite our readers to share their constructive feedback and thoughtful suggestions, which will enable us to enhance the quality, relevance, and impact of future editions. Together, we remain committed to fostering a healthier and more prosperous future for the people of Sindh.

Prof. Amin M. Khuwaja
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Disclaimer:
The editorial board is not responsible for the information and views incorporated in this newsletter. The articles are contributed by individuals and departments. The information regarding certain diseases does not serve as medical advice and a person suffering from one of such diseases should contact a qualified physician.

At the Sindh Institute of Cardiovascular Diseases (SICVD), our mission is simple yet powerful: to make quality cardiac care accessible to every individual, regardless of geography or financial capacity.

Our recognition at the 18th CSR Awards for Excellence in Healthcare reflects the dedication of our teams and strengthens our commitment to equitable, patient-centered healthcare. From expanding Chest Pain Units, including the newly inaugurated Dadu unit, to introducing specialized services such as the Cardio-Obstetrics Clinic in Sukkur, SICVD continues to bring advanced, timely, and compassionate care closer to communities.

Milestones such as SICVD Larkana surpassing 1,000 free open-heart surgeries demonstrate the impact of decentralizing specialized cardiac services. Similarly, recognition at the Pakistan Governance Forum 2026 highlights SICVD as a model of public-sector healthcare transformation.

These achievements are made possible through the support of the Government of Sindh and the tireless efforts of our doctors, nurses, and staff. As we move forward, we remain committed to innovation, accessibility, and excellence.

At SICVD, every heartbeat matters—and every life saved strengthens the future of our nation.

Prof. Jawaid Akbar Sial
Executive Director-SICVD

SICVD HONOURED AT THE 18TH CSR AWARDS FOR EXCELLENCE IN HEALTHCARE

The Sindh Institute of Cardiovascular Diseases (SICVD) has been honored with the prestigious 18th CSR Award in recognition of its remarkable services in public healthcare and corporate social responsibility. The award was received by Dr. Muhammad Moosa, Chief Operating Officer of SICVD, from the Honorable Governor of Khyber Pakhtunkhwa, Mr. Faisal Karim Kundi, along with Mr. Qaiser Ahmed Sheikh, Federal Minister, Board of Investment, Government of Pakistan.

This award acknowledges SICVD's continued efforts to provide free, timely, and high-quality cardiac care to millions of patients across Sindh. Through its network of 10 modern hospitals and over than 30 Chest Pain Units, SICVD has made life-saving cardiac treatment accessible to people near their homes.

The institute offers a wide range of services, including emergency cardiac care, advanced surgeries, diagnosis, treatment, and long-term disease management. Its integrated healthcare model helps ensure quick response, early diagnosis, and smooth referral to specialized centers when needed.

This recognition is also a tribute to the dedication of SICVD's doctors, nurses, and support staff, who work tirelessly to serve patients with compassion and professionalism. With the support of the Government of Sindh, SICVD continues to expand its services and reach underserved communities, reinforcing its mission to make quality cardiac care a basic right for everyone.

As SICVD continues to grow, it remains committed to innovation, excellence, and the highest standards of patient care—ensuring that quality cardiac services are not a privilege, but a right accessible to every individual.

Mohsin Zia
Manager Marketing,
SICVD, Karachi

SICVD SHOWCASES LANDMARK HEALTHCARE INITIATIVES AT PAKISTAN GOVERNANCE FORUM 2026

The Health Department, Government of Sindh, proudly showcased its stall at the **Pakistan Governance Forum 2026,**highlighting Sindh's transformative healthcare initiatives and its commitment to providing quality, accessible, and free medical services for the people.

The event was graced by the Honorable Prime Minister of Pakistan, Mian Muhammad Shehbaz Sharif, as Chief Guest. Among other distinguished dignitaries in attendance were Syed Yousaf Raza Gilani, Chairman of the Senate of Pakistan; Senator Mohammad Ishaq Dar, Deputy Prime Minister and Minister for Foreign Affairs; Syed Murad Ali Shah, Chief Minister, Government of Sindh; Sardar Ayaz Sadiq, Speaker of the National Assembly of Pakistan; and Mr. Ahsan Iqbal, Federal Minister for Planning, Development & Special Initiatives, along with prominent national and international delegates.

The participation of the Health Department at this prestigious forum reflected Sindh's progressive approach toward strengthening public healthcare systems and enhancing service delivery across the province.

A key highlight of the stall was the presentation of the Sindh Institute of Cardiovascular Diseases (SICVD) as a flagship model of public-sector healthcare excellence. With a network of **10 state-of-the-art hospitals and over 30 Chest Pain Units across Sindh,** SICVD continues to deliver **free-of-cost, life-saving cardiac care,** ensuring that quality treatment is accessible to patients regardless of their location or financial status.

SICVD's integrated network and patient-centric approach stand as a testament to the Government of Sindh's vision of equitable healthcare, bringing advanced cardiac services closer to communities and improving health outcomes across the province.

Mohsin Zia
Manager Marketing,
SICVD, Karachi

SICVD EXPANDS LIFE-SAVING NETWORK WITH CHEST PAIN UNIT IN DADU

The Sindh Institute of Cardiovascular Diseases (SICVD) continues to advance its mission of accessible and timely cardiac care with the inauguration of a Chest Pain Unit (CPU) in **Dadu**, located near the DHO Office at Civil Hospital.

This expansion has been made possible through the continued support of the **Government of Sindh**, whose commitment to strengthening public healthcare remains instrumental in extending life-saving cardiac services across the province.

The new facility strengthens SICVD's emergency response network, ensuring that patients experiencing cardiac symptoms receive **immediate diagnosis, early stabilization, and timely referral**—critical factors for improving survival outcomes.

The inauguration was led by Prof. Jawaid Akbar Sial, Executive Director SICVD, along with senior officials, healthcare professionals, and members of the local community.

"Timely intervention is the difference between life and loss. Through our expanding network, we are ensuring that no patient is too far from emergency cardiac care, as our vision is to make quality cardiac care accessible to every citizen."

Chest Pain Units serve as the **first point of contact in cardiac emergencies**, equipped with trained staff, ECG facilities, essential medications, and integrated emergency protocols for rapid assessment and care.

The Dadu Chest Pain Unit will operate **24/7**, providing **free-of-cost emergency cardiac services** to the residents of Dadu and surrounding areas, significantly improving access to timely treatment.

With the continued support of the Government of Sindh, SICVD remains committed to delivering **equitable, high-quality cardiac care,** bringing life-saving services closer to communities across Sindh.

Mohsin Zia
Manager Marketing,
SICVD, Karachi

BRIEF REPORT ON THE 2ND NICVD & SICVD ANNUAL SYMPOSIUM 2026

THEME: ADVANCING CARDIOVASCULAR CARE THROUGH COLLABORATION AND INNOVATION

The **2nd NICVD & SICVD Annual Symposium 2026** was successfully held on **30–31 January 2026 at the Pearl Continental (PC) Hotel, Karachi,** bringing together leading clinicians, researchers, and allied health professionals to discuss the latest advances in cardiovascular medicine and surgery. The symposium served as a dynamic platform for scientific exchange, interdisciplinary collaboration, and professional networking among healthcare professionals committed to improving cardiovascular care in Pakistan.

The pre-symposium activities commenced on **29 January,** featuring a **Research Day** and a **Preventive Cardiology Mini-Symposium,** which highlighted emerging research and emphasized the growing importance of preventive strategies in cardiovascular health. These sessions showcased local research initiatives and encouraged young investigators to contribute to the expanding body of cardiovascular evidence in the region. (These sessions will be detailed separately by their respective organizers.)

The official **inauguration ceremony** was held on the evening of **29 January,** with **Mr. Murtaza Wahab, Mayor of Karachi,** attending as the Chief Guest. The ceremony marked the formal opening of the symposium and underscored the importance of institutional and civic collaboration in addressing the burden of cardiovascular disease in Pakistan.

The scientific program on **30 and 31 January** covered a broad spectrum of topics in cardiovascular medicine and surgery. Sessions addressed contemporary issues such as **ischemic heart disease and acute coronary syndromes, structural heart disease interventions, cardiomyopathies and heart failure, and cardiovascular infections.** Presentations included discussions on emerging technologies, evolving interventional strategies, registry-based research, and clinical management challenges in resource-constrained settings.

Panel discussions following each session allowed for interactive dialogue and exchange of expert opinions.

Parallel sessions focusing on **Allied Health Sciences** further broadened the scope of the symposium by emphasizing the critical role of nursing and multidisciplinary teams in cardiovascular care, particularly in quality improvement, prevention strategies, and patient-centered management approaches.

The symposium was organized under the leadership of **Patron Prof. Tahir Saghir, Chair Prof. Javed Akbar Sial,** and **Secretary Dr. Farheen Ali and Dr. Javed Sheikh,** with the support of an active core scientific committee comprising senior faculty and clinicians from NICVD and SICVD.

Beyond the scientific deliberations, the event also provided opportunities for professional networking and collegial interaction. A **gala dinner held on the evening of 30 January** offered participants a chance to engage informally and strengthen professional relationships.

The successful conduct of the 2nd NICVD & SICVD Annual Symposium reflects the continued commitment of both institutions to fostering academic excellence, encouraging research, and advancing cardiovascular care across the region. **Cardiac care,** bringing life-saving services closer to communities across Sindh.

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NOT JUST A CITY DISEASE: THE CHANGING FACE OF HEART ATTACKS IN RURAL PAKISTAN

Ischemic heart disease (IHD) continues to be the leading cause of mortality in Pakistan, but emerging observations from rural populations are challenging widely accepted risk profiles associated with the disease. Traditionally, IHD has been linked to obesity, sedentary lifestyle, and urban living. However, recent local data and clinical observations suggest a different pattern among rural communities.

SICVD network of hospital is spread in all of Sindh. Both urban and rural populations receive world class heart care facilities by these hospitals. It has been observed that a significant proportion of patients diagnosed with ischemic heart disease are neither obese nor physically inactive. In fact, a large number belong to farming or labor-intensive occupations, involving daily physical exertion. Studies conducted in regions such as Peshawar and Southern Punjab indicate that farmers and working-class individuals form a notable proportion of IHD patients, contradicting the conventional association of heart disease with inactivity.

This paradox raises important questions about underlying risk factors beyond physical activity and body weight. While rural populations may not exhibit sedentary lifestyles, they are still exposed to other significant contributors. Hypertension, diabetes, and limited access to healthcare remain prevalent and often undiagnosed until late stages of disease.

Another critical and often overlooked factor is the widespread use of tobacco in various forms. Unlike urban settings where cigarette smoking is more common, rural populations frequently use beedi, naswar, and other smokeless tobacco products. Evidence suggests that tobacco use, both smoked and smokeless, significantly increases the risk of cardiovascular diseases, including ischemic heart disease.

Moreover, socioeconomic factors play a substantial role. Rural populations often face poor nutritional quality, high levels of psychological stress related to economic instability, and limited awareness regarding preventive health practices. Studies have also highlighted that smoking prevalence is higher in rural populations compared to urban groups, further amplifying cardiovascular risk despite otherwise active lifestyles.

These findings suggest that the risk profile of ischemic heart disease in Pakistan cannot be generalized solely based on traditional global models. Being physically active or having a lean body habitus does not necessarily confer protection in these settings. Instead, a combination of hidden risk factors, particularly tobacco use, untreated hypertension, and lack of early screening appears to drive disease burden.

Health experts emphasize the need for targeted public health strategies focusing on rural populations. Awareness campaigns addressing tobacco consumption, early diagnosis of hypertension and diabetes, and improved access to primary healthcare services are essential to curb the growing burden of ischemic heart disease in these communities.

In conclusion, ischemic heart disease in rural Pakistan presents a unique and concerning pattern, underscoring the importance of context-specific research and intervention strategies.

Dr. Syed Fayaz Mujtaba
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7 "HABITS OF LIFE" SEMINAR HELD AT SICVD TANDO MUHAMMAD KHAN

SICVD Tando Muhammad Khan (TMK) successfully organized a seminar titled "7 Habits of Life", reinforcing the institution's commitment to holistic professional development alongside clinical excellence. The session brought together doctors, paramedics, and non-technical staff, highlighting SICVD's inclusive approach toward capacity building at all levels of healthcare delivery.

The seminar was attended by participants from SICVD Hyderabad, Mithi, and Nawabshah, reflecting strong inter-center collaboration and shared learning across the network. Such engagement underscores SICVD's vision of fostering a unified organizational culture grounded in professionalism, empathy, and teamwork.

The session focused on practical, actionable habits aimed at enhancing personal effectiveness and workplace performance. Key themes included proactive behavior, goal setting, effective communication, mutual respect, and emotional intelligence. The content was delivered in a simple and relatable manner, ensuring accessibility for participants from diverse professional backgrounds.

Importantly, the seminar emphasized the direct impact of personal habits on patient care, team dynamics, and institutional efficiency. By encouraging self-reflection and positive behavioral change, the activity aimed to strengthen not only individual performance but also the overall service delivery model at SICVD.

Such initiatives are of critical importance within SICVD, where high patient volumes and demanding clinical environments require not only technical expertise but also resilience, collaboration, and strong interpersonal skills. Regular engagement in these developmental activities helps reduce workplace stress, improve coordination among teams, and promote a culture of continuous improvement.

The successful organization of this seminar at TMK highlights SICVD's ongoing efforts to invest in its human resource development across all cadres. Moving forward, similar sessions will continue to play a vital role in nurturing a motivated, cohesive, and patient-centered workforce throughout the SICVD network.

This initiative reaffirms SICVD's dedication to excellence not only in cardiac care but also in building a supportive and progressive institutional environment.

Dr. Ghazanfar Shah
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SICVD, TMK

VIOLENCE AGAINST DOCTORS IN PAKISTAN: A GROWING HEALTHCARE CRISIS

Pakistan is facing a disturbing rise in violence against healthcare professionals, transforming what was once an occasional risk into a widespread systemic issue. Doctors, particularly those working in emergency departments and underserved regions, increasingly encounter verbal abuse, physical assaults, and even life-threatening attacks. This growing hostility not only disrupts patient care but also contributes to severe psychological stress, burnout, and the ongoing migration of skilled professionals abroad.

Incidents of violence have surged in recent years, especially in public-sector hospitals where limited resources and overcrowding intensify tensions. Emergency rooms have become the focal point of conflict, as doctors must make critical decisions under pressure while dealing with distressed and often frustrated attendants. Many of these frustrations stem from systemic shortcomings such as staff shortages, lack of beds, insufficient medical supplies, and administrative inefficiencies yet frontline doctors unfairly bear the brunt of public anger.

RECENT INCIDENTS: THARPARKAR AND BEYOND

Recent events in regions like Tharparkar highlight the severity of the crisis. Reports of extreme stress and even suicides among doctors underscore the psychological toll of working in unsafe and unsupported environments. Protests and service boycotts by healthcare workers following violent incidents further demonstrate the urgency of the situation and the normalization of such behavior. A key factor fueling this crisis is the lack of institutional and legal protection. Many hospitals operate without adequate security systems or trained personnel,

EMERGENCY DEPARTMENTS: THE EPICENTER OF CONFLICT

Emergency rooms (ERs) in major hospitals have become particularly vulnerable zones. Doctors working in ER settings face the dual burden of critical decision-making and managing attendants who are often distressed, frustrated, or misinformed.
A recurring issue is the misdirected blame placed on duty doctors for systemic shortcomings such as:

- Shortage of staff
- Lack of beds or ICU facilities
- Unavailability of medicines or equipment
- Administrative inefficiencies

These factors are beyond the control of on-duty physicians, yet they frequently become the immediate targets of anger and violence.

BRAIN DRAIN: A SILENT CONSEQUENCE

One of the most alarming consequences is the accelerating brain drain. Disillusioned by unsafe working conditions and lack of respect, many doctors are seeking opportunities abroad where safety, legal protection, and professional dignity are better ensured. This migration further strains Pakistan's already overburdened healthcare system.

THE WAY FORWARD

Addressing this crisis requires urgent and coordinated action. Strengthening hospital security, enforcing strict laws against violence, and ensuring swift legal accountability are critical steps. Additionally, hospital administrations must adopt zero-tolerance policies and establish clear protocols for handling incidents. Public awareness campaigns can help educate communities about healthcare limitations and promote respect for medical professionals. Equally important is providing mental health support and counseling services for doctors.

CONCLUSION

Violence against doctors is not just a professional concern it is a serious public health issue. Protecting healthcare workers is essential to maintaining an effective healthcare system and ensuring patient safety.

Dr. Altaf Hussain Gajoo
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TRANSFORMING STROKE CARE: A LIFE SAVED THROUGH TIMELY INTERVENTION

At Sindh Institute of Cardiovascular Diseases (SICVD) Tando Mohammad Khan, stroke care has undergone a remarkable transformation over recent years. Since 2024, our center has established a comprehensive and dedicated stroke intervention program, providing cutting-edge care to patients presenting with acute ischemic stroke. With a highly trained multidisciplinary team available 24 hours a day, 7 days a week, we have successfully performed more than 100 mechanical thrombectomy procedures. Importantly, all these services are offered completely free of cost with the support of the Government of Sindh, ensuring that no patient is deprived of life-saving treatment due to financial constraints.

Stroke remains one of the leading causes of death and long-term disability worldwide, with mortality rates reaching up to 30% in severe cases. In low- and middle-income countries, the burden is even greater due to delayed presentation and limited access to advanced treatment options. The availability of free, round-the-clock stroke intervention services at our center represents a major step forward in addressing this healthcare gap and improving patient outcomes.

A recent case highlights the profound impact of timely intervention. A 45-year-old female presented to the emergency department within one hour of onset of right-sided weakness and difficulty in speech. She had been fully independent prior to the event, with no known significant medical or cardiac history. On examination, she was confused, had dysarthria, and demonstrated gaze preference. Neurological examination revealed reduced motor power, graded 2/5 in the left upper limb and 4/5 in the left lower limb, with an NIHSS score of 10, indicating a moderate stroke.

Cardiovascular examination revealed a loud first heart sound, raising suspicion of underlying valvular pathology. An urgent electrocardiogram confirmed atrial fibrillation, suggesting a cardio embolic source. Immediate non-contrast CT scan of the brain excluded intracranial hemorrhage, allowing prompt administration of weight-based alteplase as per established stroke protocols. This was followed by CT cerebral angiography, which revealed occlusion of the right internal carotid artery, confirming a large vessel occlusion.

Given these findings, the patient was taken for emergency mechanical thrombectomy after discussion with her family. During initial management, she became increasingly irritable and required elective intubation for airway protection. In the catheterization laboratory, angiography confirmed complete occlusion of the right internal carotid artery (Figure 1A). Using the ADAPT (A Direct Aspiration First Pass Technique), successful recanalization of both the internal carotid artery and the middle cerebral artery was achieved (Figures: 1 B and C), restoring cerebral blood flow.

Following the procedure, the patient was transferred to the coronary care unit for close monitoring. Over the next 36 hours, she showed remarkable neurological recovery and was successfully extubated. Her improvement was dramatic, with complete restoration of motor power in all four limbs, normalization of speech, and recovery of swallowing function. Repeat CT imaging showed no evidence of infarction or bleed, underscoring the effectiveness of rapid reperfusion therapy.

Further evaluation with echocardiography revealed severe mitral stenosis, with a mitral valve area of 1.4 cm^2 (Figure: 1 D). This finding explained the presence of atrial fibrillation and the cardio embolic nature of the stroke. The patient was initiated on anticoagulation therapy with warfarin according to established guidelines and was discharged home on the sixth day in stable condition and complete mobility.

This case clearly demonstrates that stroke, once considered a devastating and often irreversible condition, can now be effectively treated with timely and appropriate intervention. Mechanical thrombectomy has been shown in multiple large clinical trials to significantly reduce disability and improve functional independence in patients with large vessel occlusion. Studies suggest that such interventions can reduce the risk of long-term disability by nearly 50%, making it one of the most impactful advances in modern stroke care.

Equally important is the provision of these services free of cost. In many healthcare settings, the high cost of thrombectomy limits access to only a small proportion of patients. By eliminating financial barriers, our program ensures early presentation, timely treatment, and improved outcomes, while also reducing the long-term economic burden on families and society. Patients who recover fully are able to return to their normal lives, avoiding the need for prolonged rehabilitation and dependency.

Our growing experience at SICVD Tando Mohammad Khan reflects this positive trend. With more than 100 thrombectomy procedures performed since 2024, supported by a dedicated team and government-backed funding, we are witnessing a paradigm shift in stroke care delivery in our region. The combination of rapid diagnosis, advanced intervention, and equitable access has the potential to transform stroke outcomes on a large scale.

In stroke care, every minute counts—but equally important is the availability of timely and accessible treatment. When both are ensured, the results can be truly life-changing.

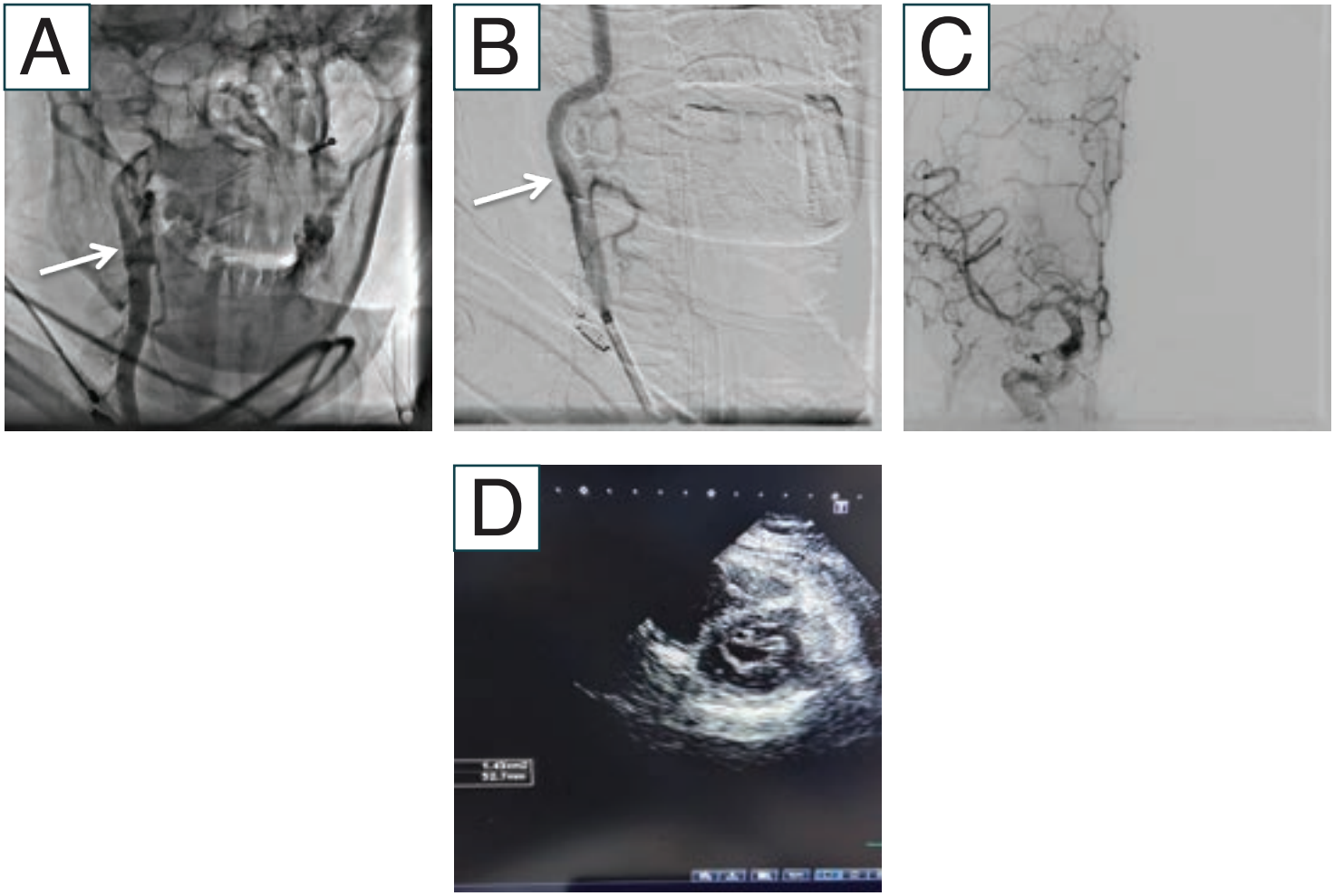

Figure 1: A) Occlusion of right internal carotid artery.
Figure 2: B) Recanalization of internal carotid artery.
Figure 3: C) Middle cerebral artery following mechanical thrombectomy.
Figure 4: D) Mitral valve area measurement in echocardiogram.

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HYPERTENSION – A SILENT KILLER

Hypertension, commonly known as high blood pressure, is one of the most prevalent and dangerous cardiovascular risk factors worldwide. It is often termed a “silent killer” because it frequently remains asymptomatic until significant and sometimes irreversible organ damage has occurred. Patients may feel entirely well while progressive vascular injury continues silently in the background.

Persistent elevation of blood pressure exerts mechanical stress on the arterial walls, leading to endothelial dysfunction, arterial stiffness, and accelerated atherosclerosis. Over time, this pathological process affects vital organs including the heart, brain, kidneys, and eyes. Uncontrolled hypertension significantly increases the risk of ischemic heart disease, heart failure, stroke, chronic kidney disease, and retinopathy.

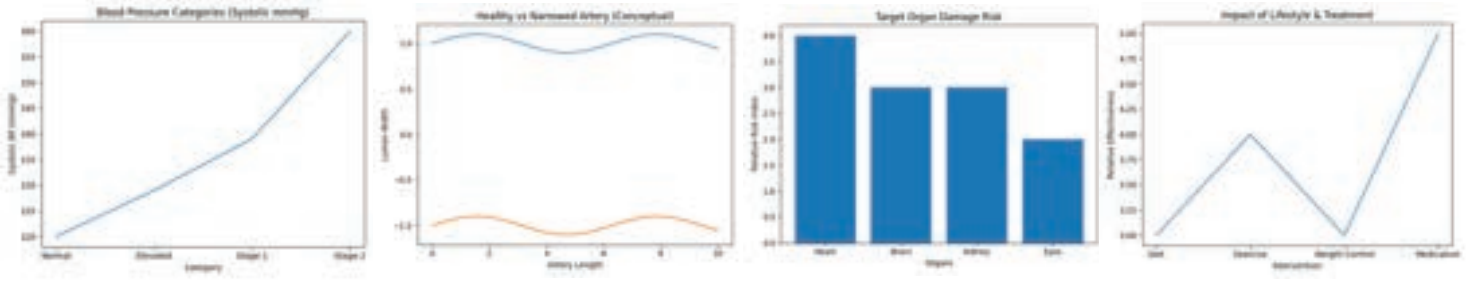
In clinical practice, early detection remains the cornerstone of prevention. Regular blood pressure monitoring, both in clinical settings and through home-based measurements, allows timely diagnosis. According to contemporary guidelines, blood pressure levels ≥140/90 mmHg require medical evaluation and management, while lower thresholds may warrant intervention in high-risk individuals.

Management of hypertension is multifaceted. Lifestyle modification forms the foundation of therapy and includes dietary salt restriction, weight optimization, regular physical activity, smoking cessation, and moderation of alcohol intake. Pharmacological therapy should be individualized based on patient profile, comorbidities, and global cardiovascular risk assessment. Adherence to therapy and periodic follow-up are essential to achieving optimal blood pressure control.

Public awareness and community-based screening initiatives are critical, particularly in developing countries where a large proportion of individuals remain undiagnosed. Educational campaigns emphasizing the importance of routine screening can significantly reduce long-term cardiovascular morbidity and mortality.

At SICVD, our commitment remains focused on early identification, evidence-based management, and patient education to combat this silent epidemic. Through preventive cardiology programs and multidisciplinary collaboration, we aim to reduce the burden of hypertension-related complications in our population.

Hypertension is preventable, detectable, and treatable. The key lies in vigilance, awareness, and sustained clinical care before catastrophic events occur.



Dr. Ashok Kumar
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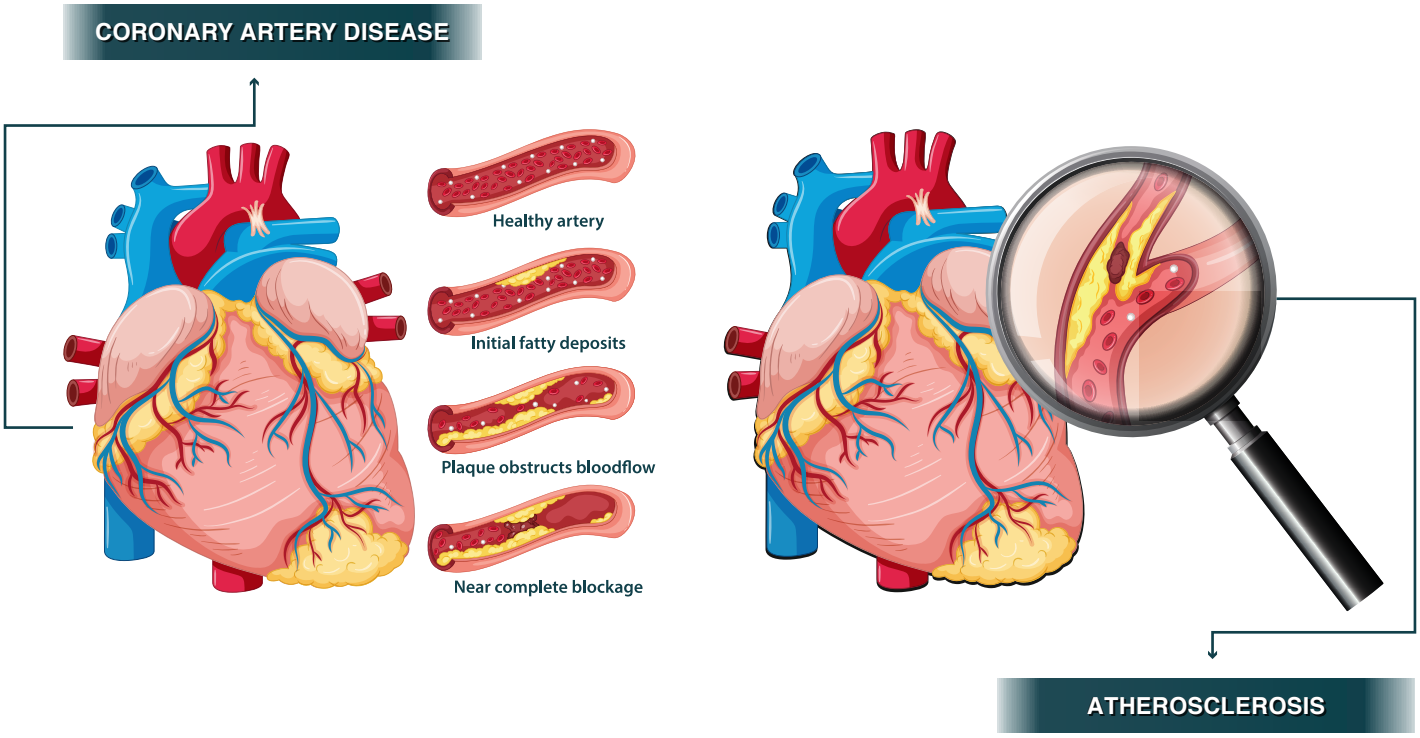
EARLY-ONSET CORONARY ARTERY DISEASE: WHY YOUNG HEARTS ARE AT RISK

Coronary artery disease (CAD), once considered a condition of older adults, is increasingly affecting younger individuals—even those in their 20s and 30s. Early-onset CAD—occurring before 45 years in men and 55 years in women—has become a growing public health concern. The World Health Organization notes that changing lifestyles, rising metabolic disorders, and modern stress factors are major contributors to this trend.



CAD develops when fatty deposits accumulate in the coronary arteries, a process called Atherosclerosis. Over time, these plaques narrow the arteries and reduce blood flow to the heart. If a plaque ruptures, it can cause a sudden blockage, leading to a heart attack (Myocardial Infarction) or even sudden cardiac death, sometimes without prior warning signs.

RISK FACTORS IN YOUNG ADULTS:

Several factors make younger individuals more vulnerable to CAD:

- **Unhealthy diet:** High in fast food, fried foods, sugar, and processed snacks
- **Smoking and vaping:** Damages blood vessels and promotes clot formation
- **Physical inactivity:** Sedentary lifestyle weakens the heart and blood vessels
- **Obesity:** Increases strain on the heart and raises blood pressure and diabetes risk
- **High blood pressure and high cholesterol**
- **Diabetes (especially Type 2 Diabetes)**
- **Chronic stress and poor sleep patterns**
- **Genetic factors:** Family history of early heart disease or inherited conditions such as familial hypercholesterolemia

Young adults may experience chest pain, shortness of breath, sweating, nausea, or pain radiating to the arm, jaw, or back. Some may have atypical symptoms such as fatigue, dizziness, or mild discomfort, which are often ignored until a serious event occurs.

IMMEDIATE ACTIONS FOR CHEST PAIN OR COLLAPSE:

- Do not ignore chest discomfort lasting more than a few minutes—seek emergency medical help immediately.
- If available and prescribed, take Aspirin to reduce clot formation.
- In case of collapse or unconsciousness, check responsiveness and breathing.
- Start Cardiopulmonary Resuscitation (CPR) immediately if there is no Pulse or Breathing.
- Call emergency services without delay.

PREVENTION AND AWARENESS:

Adopt a heart-healthy lifestyle with regular exercise, a balanced diet, avoiding tobacco, and managing stress. Regular screenings for blood pressure, blood sugar, and cholesterol are strongly recommended by the American Heart Association.

TAKE-HOME MESSAGE:

Adopt a heart-healthy lifestyle with regular exercise, a balanced diet, avoiding tobacco, and managing stress. Regular screenings for blood pressure, blood sugar, and cholesterol are strongly recommended by the American Heart Association. Take-Home Message: Heart disease can start in young adults silently. Recognizing early symptoms, acting quickly during emergencies, and maintaining a healthy lifestyle can save lives. Awareness of risk factors, especially in younger age groups, is the first step toward prevention.

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ESTABLISHMENT OF FETAL ECHOCARDIOGRAPHY SERVICES AT SICVD SUKKUR: A STEP TOWARD ENHANCED PRENATAL CARDIAC CARE

ABSTRACT:

BACKGROUND

Congenital heart disease (CHD) remains one of the leading causes of perinatal morbidity and mortality worldwide, with a substantial burden in Pakistan. Early prenatal detection through fetal echocardiography significantly improves clinical outcomes by enabling timely intervention and optimized perinatal management. However, access to specialized fetal cardiac imaging has traditionally been limited to tertiary care centers in major cities.

OBJECTIVE

To highlight the establishment and clinical significance of fetal echocardiography services at the Sindh Institute of Cardiovascular Diseases (SICVD), Sukkur, and its role in improving regional prenatal cardiac care.

METHODS

This is a descriptive report outlining the implementation of fetal echocardiography services at SICVD Sukkur. The service includes comprehensive fetal cardiac assessment using two-dimensional, M-mode, and Doppler echocardiographic techniques, following standard international imaging protocols. Target populations include both routine antenatal cases and high-risk pregnancies referred for suspected fetal cardiac anomalies.

RESULTS

The introduction of fetal echocardiography at Sukkur has improved access to early diagnosis of congenital cardiac anomalies, including complex lesions such as hypoplastic left heart syndrome, transposition of the great arteries, tetralogy of Fallot, and atrioventricular septal defects. The service facilitates early risk stratification, prenatal counseling, and coordinated perinatal care planning. It also reduces the need for referrals to distant centers such as Karachi, thereby decreasing delays in diagnosis and associated healthcare costs.

CONCLUSION

The establishment of fetal echocardiography services at SICVD Sukkur represents a significant advancement in decentralized cardiac care. It strengthens prenatal diagnostic capacity, supports multidisciplinary management, and has the potential to improve neonatal outcomes by enabling early detection and timely intervention for congenital heart disease in underserved populations.

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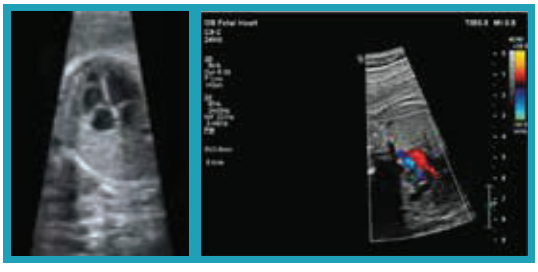


SHAPING THE FUTURE OF ELECTROPHYSIOLOGY IN PAKISTAN: TRAINING THE NEXT GENERATION OF ELECTROPHYSIOLOGIST AT SICVD HYDERABAD

Electrophysiology (EP) is one of the most advanced branches of cardiology, providing life-saving interventions for patients suffering from complex rhythm disorders. In Pakistan, this specialty has only recently begun to take root, yet significant progress is already visible thanks to the pioneering efforts of the **Sindh Institute of Cardiovascular Diseases (SICVD).**

SICVD, under the Sindh government, has established itself as a trailblazer in delivering free-of-cost cardiac care across the province. What makes this initiative remarkable is not only the scale of its services but also its commitment to introducing advanced treatments in areas where they had never existed before. Hyderabad, Sindh's second-largest city, is a prime example. Here, SICVD launched free EP services, transforming patient care and ensuring that communities previously deprived of such facilities now have access to cutting-edge treatment.

The importance of SICVD's chain cannot be overstated. By offering comprehensive cardiac services without financial barriers, it has set a new benchmark for equitable healthcare in Pakistan. Beyond treatment, SICVD has taken bold steps to expand the scope of electrophysiology, ensuring that this vital specialty is not confined to major metropolitan centers but reaches patients across Sindh.

Now, SICVD is looking toward the future. Recognizing that sustainability lies in building human capacity, the institute has begun focusing on fellowship programs and structured training pathways. The goal is clear: to train and mentor the next generation of cardiologists in electrophysiology, equipping them with the expertise to continue and expand this mission. Hyderabad is being positioned not only as a center of patient care but also as a hub for research, innovation, and advanced training.

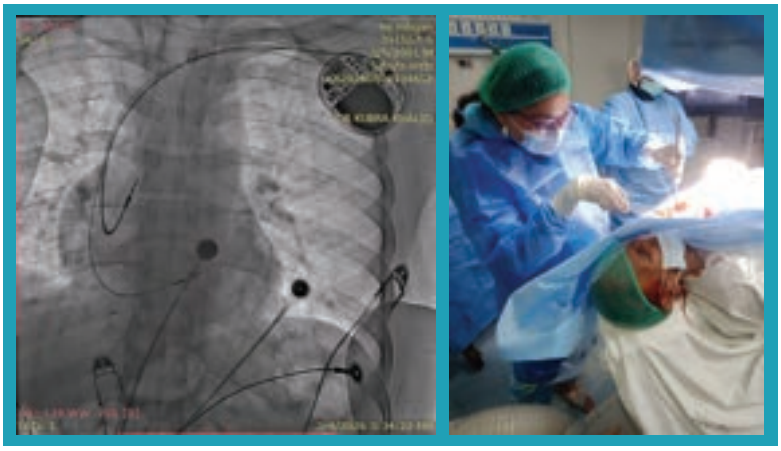
SICVD VISION FORWARD

- **Mentorship & Training:** Developing fellowship programs to guide aspiring cardiologists into EP.
- **Sustainability:** Creating a pipeline of specialists to ensure continuity of care.
- **Equity in Healthcare:** Expanding free treatment initiatives so no patient is left behind.
- **Innovation Hub:** Establishing Hyderabad as a center for EP research, training, and excellence.

This journey is about more than medicine—it is about **legacy and leadership**. SICVD has proven that with vision and commitment, barriers can be broken and lives transformed. From introducing EP services where none existed to now investing in fellowship training, SICVD is ensuring that the future of electrophysiology in Pakistan is secure, inclusive, and progressive.

CALL TO ACTION

Medical institutions, government bodies, and young doctors are invited to join this mission. The future of electrophysiology depends on collaboration, vision, and courage. With SICVD paving the way, Hyderabad has taken the first step—now it is time to walk together toward a healthier tomorrow.



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MINIMALLY INVASIVE CARDIAC SURGERY AT SICVD SUKKUR:INNOVATION, IMPACT, AND SUSTAINABILITY

Since its inception in **2018**, the Minimally Invasive Cardiac Surgery Programme at **SICVD Sukkur** has become an important milestone in the advancement of cardiac surgical services in upper Sindh. What began as a progressive clinical initiative has now developed into a sustainable and meaningful part of our surgical practice, reflecting the institution's commitment to innovation, quality, and patient-centered care.

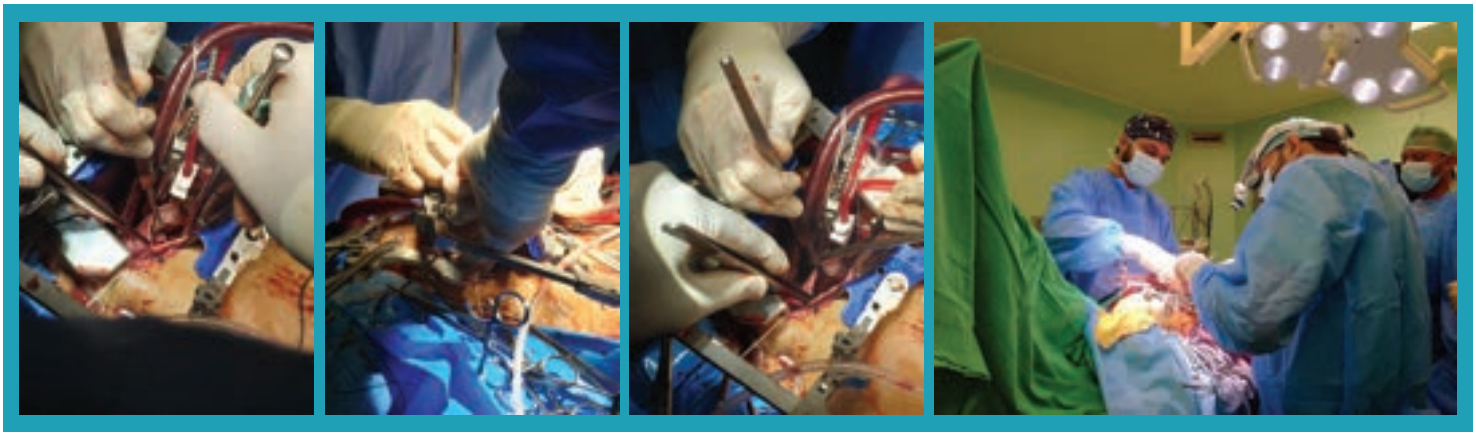
The introduction of minimal invasive cardiac surgery was more than the adoption of a new technique. It represented a broader vision of improving surgical outcomes while reducing the physical and emotional burden on patients and their families. In our region, where many patients travel long distances from underserved areas, access to advanced cardiac care closer to home has made a real difference.

The benefits for patients have been significant. Smaller incisions reduced postoperative pain, less blood loss, fewer wound-related complications, earlier mobilization, shorter hospital stay, and faster recovery have all contributed to a better overall patient experience. These benefits are especially meaningful for patients from low- and middle-income backgrounds, where prolonged hospitalization can create emotional, social, and financial stress for the entire family.

The success of this programme has been built on teamwork. Surgeons, anaesthetists, perfusionists, nursing staff, operating room personnel, and intensive care teams have all contributed to creating a safe, reliable, and patient-focused service. Their dedication and coordinated efforts have allowed the programme to grow steadily and have strengthened the trust that patients place in our centre.

Equally important is the sustainability of the programme. In a public-sector healthcare system, long-term success depends not only on technical expertise but also on institutional support, structured training, team development, and consistent outcomes. The continuation of this service since 2018 reflects SICVD Sukkur's ability to integrate modern cardiac surgical innovation into routine practice in a practical and enduring way.

Today, the Minimally Invasive Cardiac Surgery Programme stands as a proud example of SICVD Sukkur's mission in action: to provide advanced, safe, and affordable cardiac care with compassion and responsibility. It demonstrates that meaningful innovation can thrive beyond major metropolitan centres when supported by vision, teamwork, and unwavering dedication to patient welfare.



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SICVD LARKANA ACHIEVES MILESTONE OF 1,000 FREE HEART SURGERIES

The Sindh Institute of Cardiovascular Diseases (SICVD) Larkana has achieved a significant milestone by successfully performing 1,000 heart surgeries, marking a major advancement in the provision of specialized cardiac care in upper Sindh. This achievement highlights the dedication of the surgical team and the continued commitment of the Government of Sindh to ensure accessible and high-quality healthcare for all citizens.

One of the most remarkable aspects of this achievement is that all heart surgeries and related treatments are provided completely free of cost. The entire financial burden of these procedures is borne by the Government of Sindh, ensuring that patients receive life-saving treatment regardless of their financial status. Cardiac surgeries are usually very expensive and often beyond the reach of low to middle-income families, but the SICVD model has removed this barrier by offering free diagnostics, surgeries, medicines, and post-operative care.

Since its establishment, SICVD Larkana has become a lifeline for patients suffering from cardiovascular diseases in the region. Patients from Larkana and nearby districts such as Shikarpur, Jacobabad, Qambar-Shahdadkot, Kashmore, and Dadu now have access to advanced cardiac treatment close to home. Even labourers working in countries such as the UAE, Saudi Arabia, and Malaysia have travelled back to Larkana to receive life-saving but otherwise expensive heart surgeries free of cost at SICVD, made possible through the support of the Government of Sindh.

The cardiac surgery program at SICVD Larkana has rapidly developed with state-of-the-art operation theatres, modern diagnostic equipment, and a highly trained team of cardiac surgeons, cardiac anaesthesiologists, perfusionists, intensive care nurses, and cardiac theatre staff. The surgeries performed include coronary artery bypass grafting (CABG), heart valve replacements, and other complex cardiac procedures. Each successful surgery represents a life saved and renewed hope for patients and their families.

The completion of 1,000 heart surgeries reflects not only the clinical excellence of the institution but also the growing trust of the community in SICVD's services. Patients and their families have widely appreciated the compassionate care, professionalism, and dedication shown by the hospital staff.

This milestone represents an important step in strengthening public healthcare in the province. With the continued support of the Government of Sindh and the commitment of its medical professionals, SICVD Larkana aims to further expand its cardiac services and continue saving lives across the region.

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MILESTONES IN CARDIAC CARE:ADVANCEMENTS AND ACHIEVEMENTS

At SICVD Hyderabad, we're thrilled to share recent milestones that highlight our commitment to excellence in cardiac care.

ADVANCEMENTS IN CABG TECHNIQUE

We've shifted our focus to total arterial grafting in coronary artery bypass grafting (CABG), using left internal mammary artery (LIMA) and radial artery grafts. This approach improves long-term outcomes, with studies showing better patency rates and reduced reintervention.

TEACHING PROGRAM FLOURISHES

Our cardiac surgery fellows continue to excel, with recent graduates clearing their exams with ease and securing positions at reputable institutions. Our comprehensive training program emphasizes research and clinical excellence, producing well-rounded cardiac surgeons. We're proud to see our fellows succeed and confident that future candidates will follow same path.

LANDMARK SURGERIES

We've completed our 1,000th open-heart surgery at our satellite center, a testament to our team's skill and dedication. This milestone reflects our commitment to delivering high-quality cardiac care to our community.
These achievements underscore our hospital's commitment to innovation, education, and excellence in cardiac care. We're proud of our team's efforts and look forward to continued success.

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VSD DEVICE CLOSURE: A NEW MILESTONE IN PEDIATRIC CARDIOLOGY AT SICVD HYDERABAD

SICVD Hyderabad proudly marks a significant advancement in pediatric cardiac care with the successful initiation of Ventricular Septal Defect (VSD) device closure procedures. This landmark achievement represents the first of its kind at the institution and ushers in a new era of minimally invasive cardiac interventions for children in the region.

Ventricular Septal Defect, one of the most common congenital heart diseases, has traditionally been managed through open-heart surgery. However, with recent advancements in interventional cardiology, transcatheter device closure has emerged as a safe and effective alternative. This technique offers multiple benefits, including shorter hospital stays, minimal procedural discomfort, absence of surgical scars, avoidance of cardiopulmonary bypass and aortic cross-clamping, and faster recovery. The introduction of this service at SICVD Hyderabad reflects the institution's continued commitment to delivering state-of-the-art, patient-centered care.The inaugural procedure was successfully performed on a 10-year-old girl, a known case of a small perimembranous VSD under regular follow-up. Her most recent evaluation, including detailed echo-cardiography, revealed a small perimembranous VSD with left-to-right shunt with associated dilation of the left atrium and left ventricle. The defect measured approximately 3 mm on the right ventricular side and 5 mm on the left ventricular side.

Following comprehensive counseling and shared decision-making with the patient's family, transcatheter closure was planned. The procedure was performed under conscious sedation using a retrograde approach. The defect was successfully closed with a 6/4 Konar Multifunctional Occluder (MFO) device. The intervention was completed without complications, and the patient had an uneventful recovery, allowing discharge the following day.

This milestone highlights the expertise, dedication, and collaborative efforts of the Pediatric Cardiology team at SICVD Hyderabad. It also reflects the institution's vision to expand advanced cardiac services and adopt innovative techniques for improved patient outcomes.

The initiation of VSD device closure not only represents a technological advancement but also significantly enhances access to specialized pediatric cardiac care across Sindh. By offering these services locally and free of cost, SICVD continues to reduce the financial and logistical burden on families who previously had to travel to distant centers for such interventions. As we celebrate this achievement, SICVD Hyderabad remains steadfast in its commitment to excellence, innovation, and compassionate care, with a continued focus on advancing pediatric cardiology services in the region.

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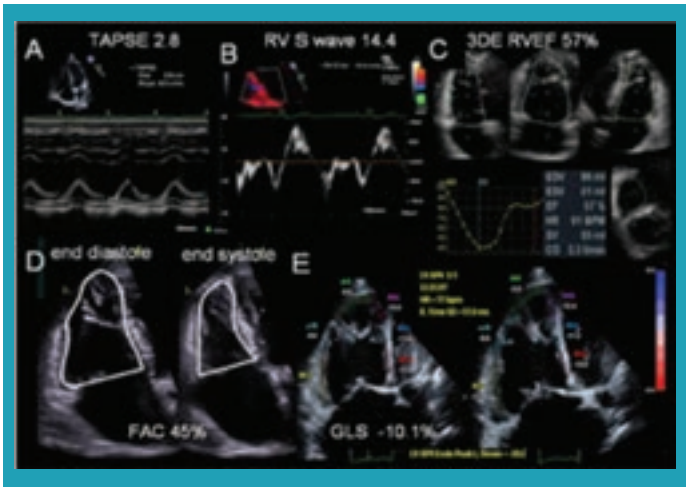
ASSESSMENT OF RIGHT VENTRICULAR FUNCTION ON ECHOCARDIOGRAPHY

Assessment of right ventricular (RV) function is a critical component of comprehensive echocardiography, particularly in patients with pulmonary hypertension, congenital heart disease, and heart failure. Unlike the left ventricle, the RV has a complex crescent shape and is highly sensitive to loading conditions, making its evaluation more challenging.

A multimodal approach is recommended for accurate RV assessment. Tricuspid annular plane systolic excursion (TAPSE) is one of the most commonly used parameters due to its simplicity and reproducibility. TAPSE reflects longitudinal RV function and is obtained from the apical four-chamber view using M-mode. A value less than 17 mm typically indicates RV systolic dysfunction.

Tissue Doppler imaging (TDI) of the tricuspid annulus provides another reliable measure. The systolic velocity (S') reflects longitudinal myocardial contraction, with values below 9.5 cm/s suggesting impaired RV function. Fractional area change (FAC), calculated from the RV end-diastolic and end-systolic areas, is another important parameter, with values less than 35% indicating dysfunction.



Advanced techniques such as RV free wall strain using speckle-tracking echocardiography offer more sensitive detection of subclinical dysfunction. A strain value less negative than -20% is generally considered abnormal. Three-dimensional echocardiography can provide accurate RV volumes and ejection fraction, overcoming geometric assumptions.

Qualitative assessment also remains important. Visual estimation of RV size, wall motion, and comparison with left ventricular size should always be performed. Additionally, assessment of right atrial size, inferior vena cava (IVC) diameter, and collapsibility provides insight into right-sided pressures.

In conclusion, no single parameter is sufficient for RV assessment. A comprehensive approach combining conventional, Doppler, and advanced imaging techniques ensures accurate evaluation of RV function, aiding in diagnosis, prognosis, and management decisions.

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SUCCESSFUL ASD DEVICE CLOSURE UNDER CONSCIOUS SEDATION AT SICVD HYDERABAD

The cardiology and anesthesia teams at SICVD Hyderabad successfully performed a transcatheter atrial septal defect (ASD) device closure under transesophageal echocardiography (TEE) guidance using conscious sedation,highlighting the institute's continued commitment to minimally invasive and patient-centered cardiac care.

CASE OVERVIEW

A 28-year-old female patient presented with complaints of exertional dyspnea (NYHA Class II). Transthoracic echocardiography revealed a secundum ASD measuring 18 mm with a significant left-to-right shunt and mild right heart enlargement.

After thorough evaluation, the patient was planned for transcatheter ASD device closure under TEE guidance.

INNOVATIVE ANESTHETIC APPROACH

Instead of conventional general anesthesia, the procedure was performed under carefully titrated conscious sedation. The anesthesia team ensured:

- Continuous ECG, blood pressure, and oxygen saturation monitoring
- Supplemental oxygen via nasal cannula
- Titrated doses of midazolam, Nalbuphine, and propofol
- Topical throat anesthesia for patient comfort

The patient maintained spontaneous breathing throughout the procedure without airway compromise.

PROCEDURE HIGHLIGHTS

- TEE confirmed adequate septal rims for device placement
- A 20 mm septal occluder device was successfully deployed
- No residual shunt detected on color Doppler
- No valvular impingement observed
- Hemodynamics remained stable throughout
- Total procedural time was approximately 30-45 minutes

OUTCOME

The patient recovered smoothly, with no desaturation episodes, arrhythmias, or complications. She was monitored post-procedure and discharged in stable condition the following day.

SIGNIFICANCE

- Performing ASD device closure under conscious sedation offers several advantages:
- Avoidance of endotracheal intubation
- Reduced anesthesia-related risks
- Faster recovery
- Enhanced patient comfort
- Reduced hospital stay

This successful case reflects the expertise and coordinated teamwork of the cardiology and anesthesia departments at SICVD Hyderabad and reinforces the institution's dedication to adopting safe, efficient, and modern cardiac interventions.

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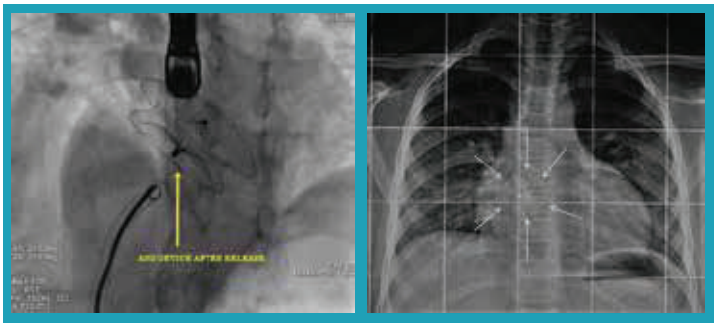


SWEET BLOOD, SICK HEART: HOW DIABETES DAMAGES THE HEART

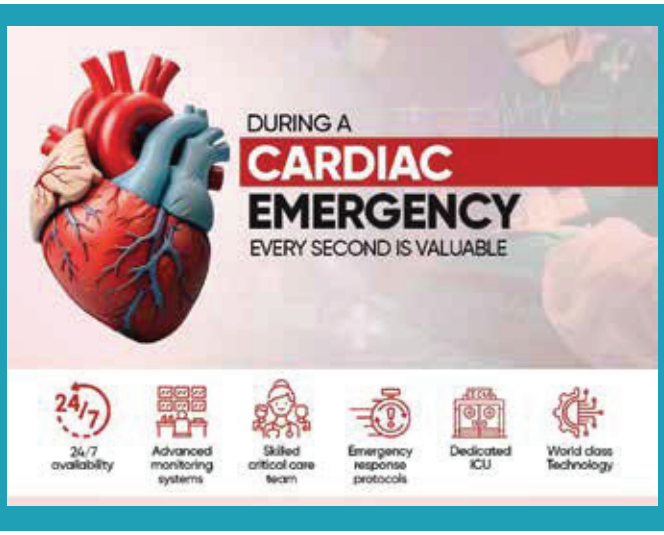
Diabetes mellitus is one of the most common and chronic disease worldwide and has become a major public health concern. Multiple studies proved that patients with DM are more prone to cardiovascular events and major adverse events. While many people are aware that diabetes affects only blood sugar levels but only fewer understand its profound impact on the heart and blood vessels. Several mechanisms explain the strong association between diabetes and cardiovascular disease by accelerated atherosclerosis, endothelial dysfunction, chronic inflammation, and dyslipidemia and prothrombotic state.

DM also contributes to several risk factors that further strain the cardiovascular system. It also affects high blood pressure, abnormal cholesterol levels, and obesity. This combination greatly increases the likelihood of developing atherosclerosis, a condition in which arteries become hardened and narrowed. As a result, the heart must work harder to pump blood through these compromised vessels. Another most important and alarming condition in diabetic patients is **"Silent Heart Disease"**, because it damages nerves that are responsible for pain signals, some patients may not experience the typical warning signs of Heart attack/MI such as severe chest pain but may present as shortness of breath, fatigue, nausea, or discomfort in the jaw, back, or arms and it causes delay in treatment and lead to adverse outcome.

One of the most significant innovations in modern medicine is that the risk of cardiac diseases can be significantly reduced through proper management. Maintaining blood sugar levels, blood pressure and cholesterol, following a heart healthy diet, engaging in regular physical activity and avoiding smoking are essential steps in protecting the heart. Regular medical checkups and adherence to prescribed medication also play vita role.

An institution such as Sindh Institute of Cardiovascular Diseases (SICVD) is one of the largest public sector cardiac networks in Pakistan and it emphasizes early detection and preventive care to reduce the burden of cardiovascular disease among diabetic patients. SICVD mission is to provide accessible, high quality cardiac care to all patients regardless of socioeconomic status and to reduce the burden of cardiovascular disease in Pakistan.

The SICVD network includes around 10 cardiac hospitals and more than 30 chest pain units across Sindh, ensuring rapid treatment for heart attack patients. In 2025 alone, the system treated over 2 million patients, highlighting its major contribution in reducing cardiovascular mortality and morbidity in Pakistan. A unique feature of SICVD is that **"All Cardiac Services Are Provided Completely Free of Cost"**, making advanced cardiac care accessible to patients regardless of financial status.



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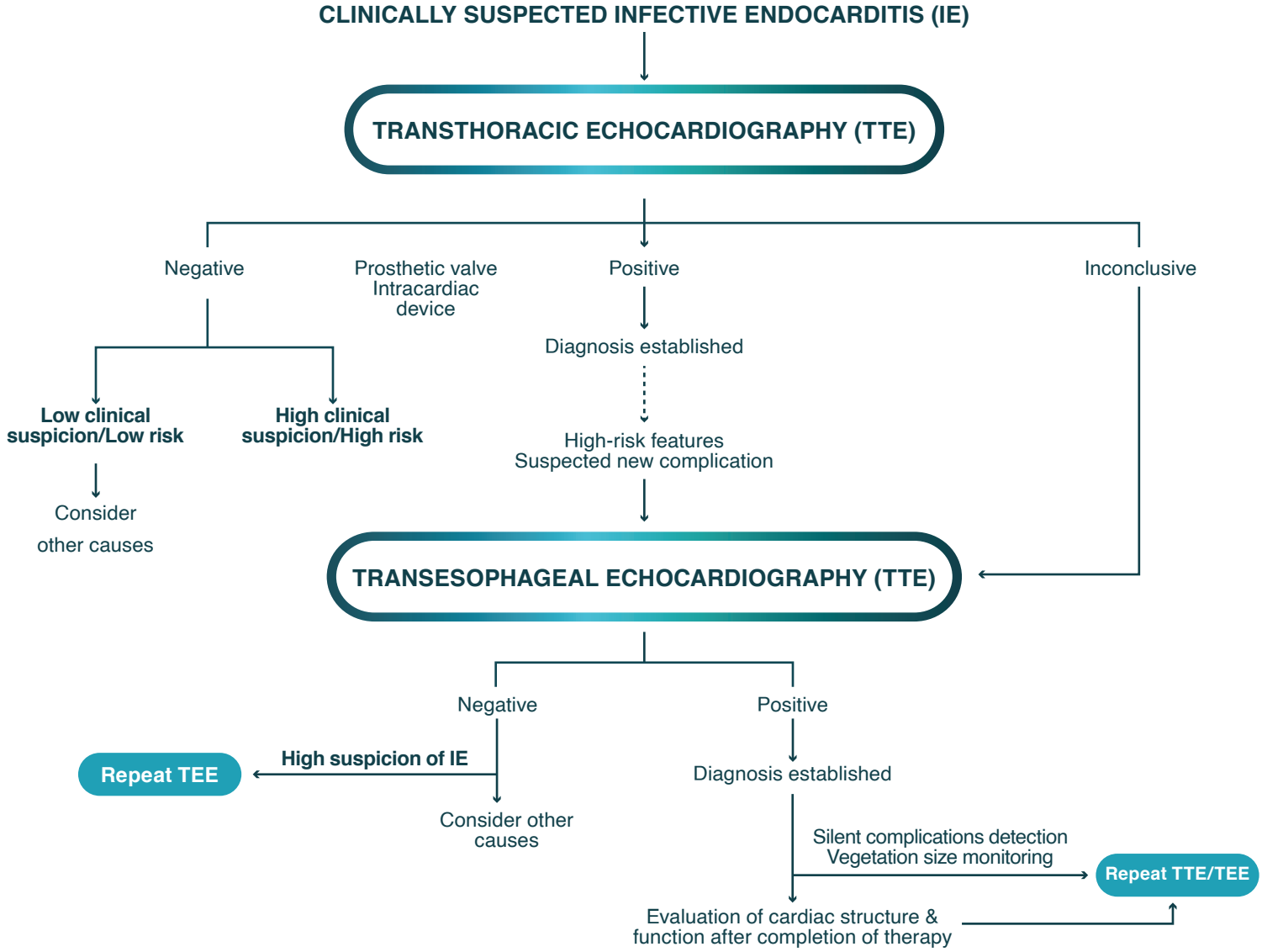
ASSESSMENT OF INFECTIVE ENDOCARDITIS ON ECHOCARDIOGRAPHY

Infective endocarditis (IE) remains a life-threatening condition with high morbidity and mortality, often involving heart valves and requiring prompt diagnosis for optimal outcomes, mortality rate still exceeds 20% despite modern therapies so early diagnosis is critical. While dedicated IE guidelines exist (e.g., 2023 ESC), the 2025 ACC/AHA and ESC/EACTS Valvular Heart Disease (VHD) Guidelines reinforce echocardiography as the cornerstone imaging modality for suspected IE, especially in the context of valvular complications, prosthetic valves, and multidisciplinary decision-making.



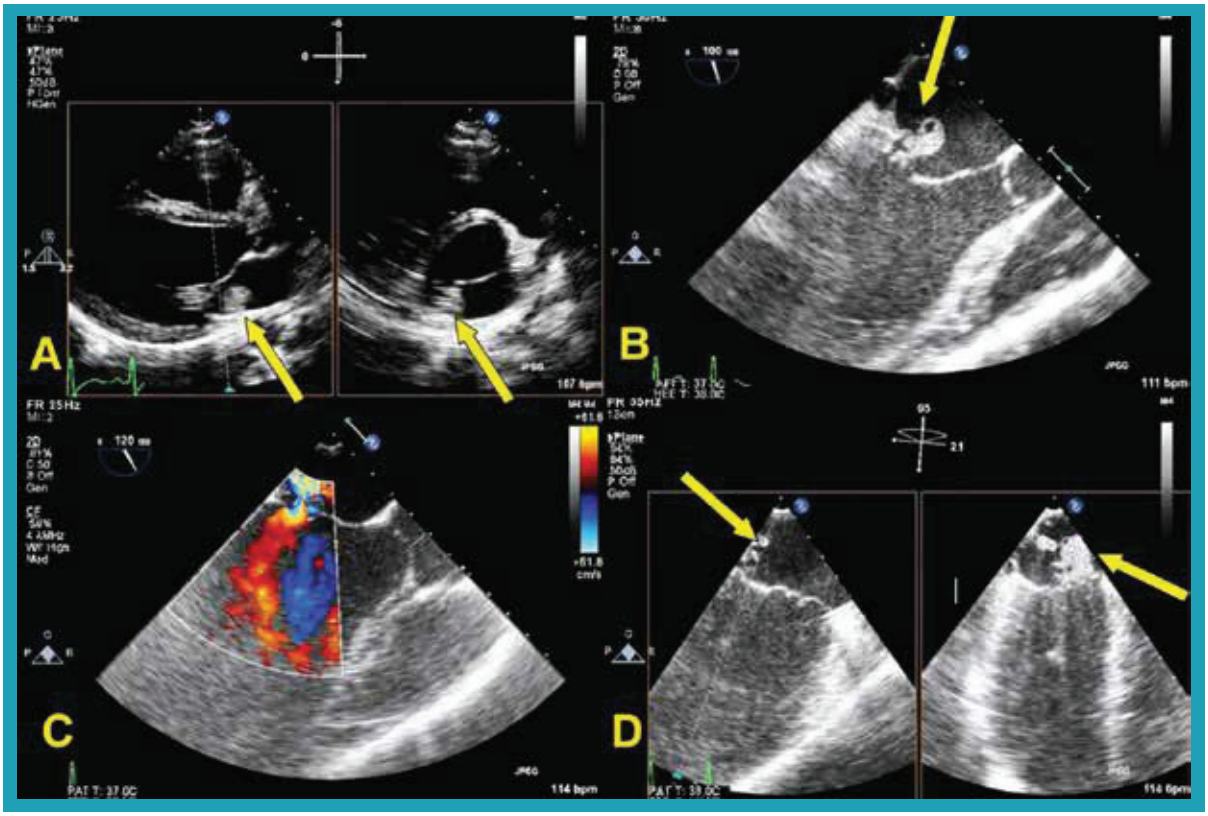
ESC and AHA recommendations for the initial assessment of patient with clinically suspected infective endocarditis using echocardiography

KEY ECHOCARDIOGRAPHIC FINDINGS SUPPORTING IE DIAGNOSIS AS PER MAJOR DUKE'S CRITERIA INCLUDE:

VEGETATIONS:
Irregular, mobile, oscillating masses adherent to valves, endocardium, or prosthetic material in the direction of regurgitation jet.

ABSCESSES OR PERIVALVULAR COMPLICATIONS:
Thickened, echodense areas with possible cavitation, pseudoaneurysm, or fistula formation.

NEW OR WORSENING REGURGITATION:
leaflet perforation, or prosthetic dehiscence.



Vegetation Composition

1. Infective
   - Blood cultures +
   - IE - specific organisms
2. Noninfective

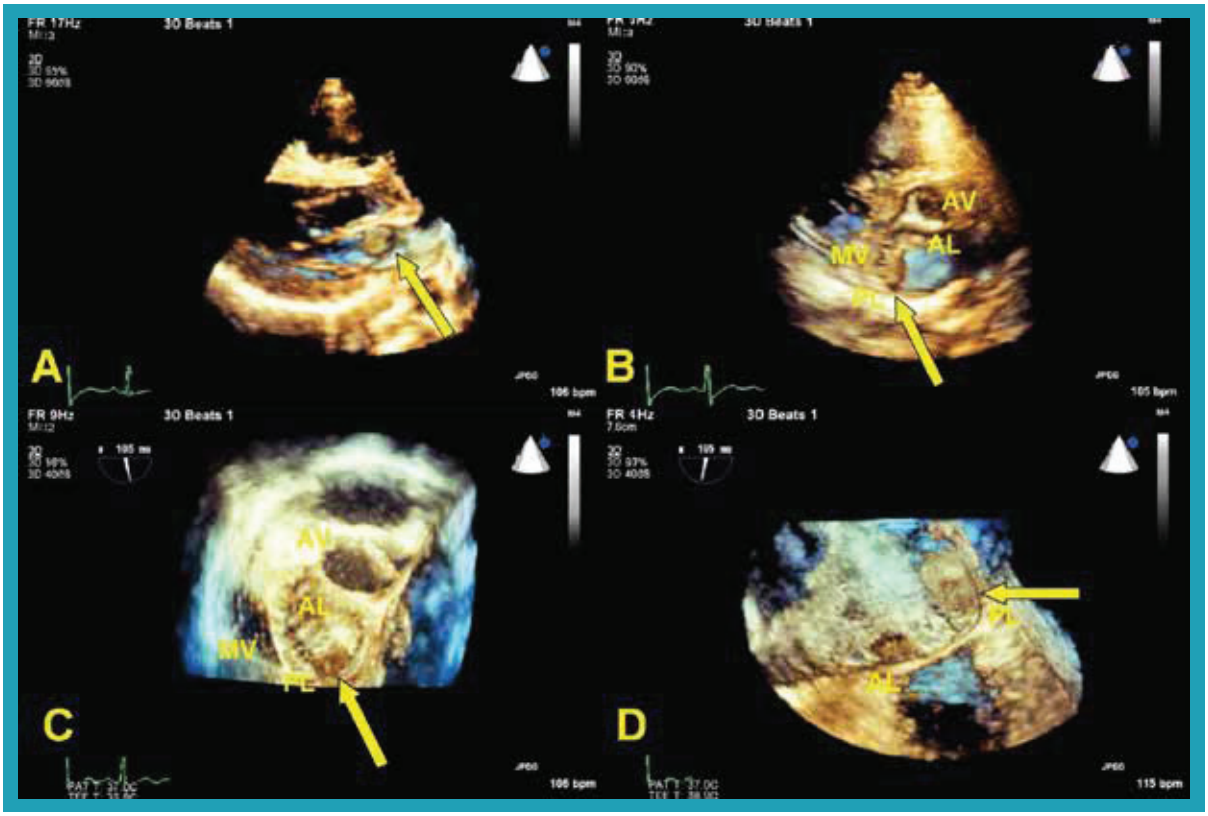
Vegetation Location

1. Valvular
   - Native valve
   - Prosthesis
2. Mural
3. Device-associated

Vegetation Complication

1. Local
   - Abscess
   - Perforations
2. Distant
   - Spetic emboli

(A) Parasternal long-axis window of two-dimensional and three-dimensional transthoracic echocardiography (TTE) demonstrates a floppy vegetation. (B) (TEE) image from 100° midesophageal level revealed the vegetation. (C) TEE image from 120° midesophageal level showed vegetation and moderate-to-severe mitral regurgitation by colour Doppler echocardiography. (D) TEE image from X-plain 120° showed vegetation.



Serial echocardiography monitors response to therapy, detects progressive valve destruction, heart failure, or embolization, and guides timing of intervention. In prosthetic valve cases, the guidelines stress careful evaluation for hypo-attenuated leaflet thickening or thrombosis, distinguishing these from infection. At our institute, integration of echocardiographic findings with microbiological data and the Heart Team ensures guideline-directed management. The 2025 VHD guidelines underscore the value of Heart Valve Centres for complex IE cases requiring advanced imaging and timely surgical decisions.

In conclusion, adherence to TTE-first followed by selective or complementary TEE, as reinforced in the 2025 AHA and ESC valvular guidelines, enables accurate diagnosis, risk stratification, and improved survival in IE. Continued training in quantitative and 3D echocardiography will further enhance care in this challenging field.

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DOBUTAMINE STRESS ECHOCARDIOGRAPHY (DSE) FROM ECHOCARDIOGRAPHER'S PERSPECTIVE

Dobutamine Stress Echocardiography (DSE) is a non-invasive cardiac imaging technique used to evaluate myocardial function under pharmacologic stress. It is particularly valuable in patients who are unable to perform exercise-based stress testing. The test involves intravenous administration of dobutamine to increase heart rate and myocardial contractility, simulating physiological stress while echocardiographic images are acquired in real time.

From an echocardiographer's perspective, DSE is a highly operator-dependent procedure requiring precision, speed, and expertise. Standard imaging includes parasternal and apical views obtained at baseline, during incremental stages of dobutamine infusion, and at peak stress. The primary goal is to identify new or worsening wall motion abnormalities, which indicate myocardial ischemia.

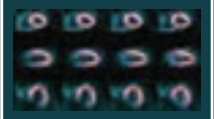
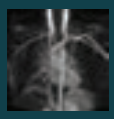
DSE has several important clinical applications. It is widely used for the diagnosis of coronary artery disease, risk stratification, and preoperative cardiac evaluation.

Additionally, it plays a key role in assessing myocardial viability by distinguishing viable but dysfunctional myocardium from scar tissue. In valvular heart disease, it is useful for evaluating contractile reserve and functional severity under stress conditions.

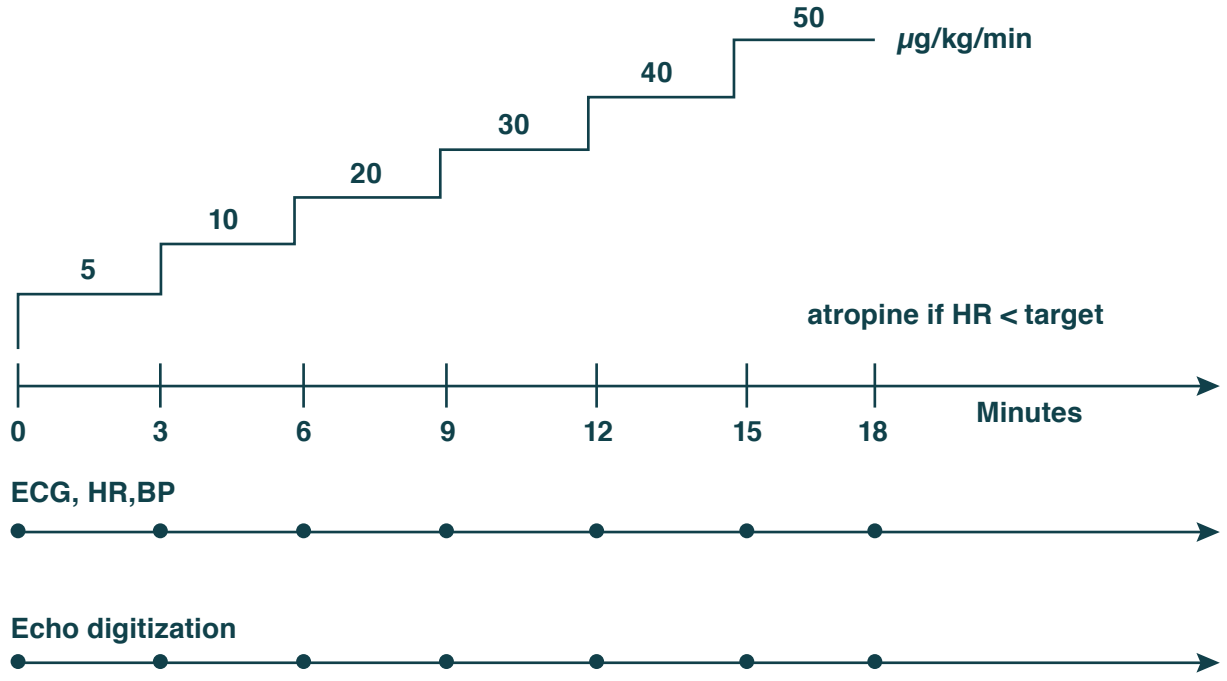
The technique offers multiple advantages. It is radiation-free, making it safe for repeated use, and provides real-time visualization of myocardial contractility. It is cost-effective, widely available, and can be performed at the bedside in critically ill patients. Its high temporal resolution allows accurate assessment of rapid cardiac motion changes. However, DSE also has limitations. It is highly operator-dependent, and image quality can be suboptimal in patients with poor acoustic windows, such as those with obesity or chronic lung disease. Interpretation of wall motion abnormalities is somewhat subjective and requires significant experience. Additionally, dobutamine may induce arrhythmias or hemodynamic instability in some patients.

In conclusion, Dobutamine Stress Echocardiography is a powerful and versatile diagnostic tool. Its effectiveness depends largely on the skill and experience of the echocardiographer, making expertise a critical factor in achieving accurate and reliable results.

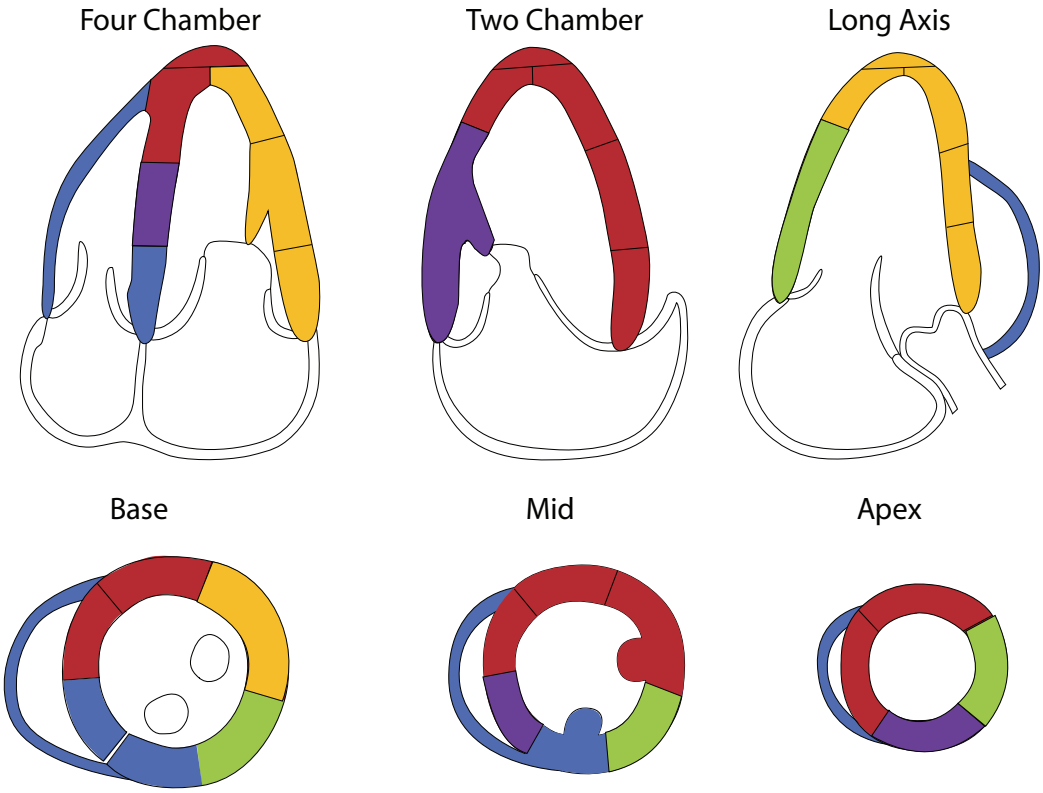
Dobutamine Stress Echocardiography (DSE) has higher specificity than Myocardial Perfusion Scintigraphy (MPS) because it directly detects wall-motion abnormalities caused by ischemia. MPS, however, generally has higher sensitivity since it detects perfusion defects earlier than motion changes. DSE is radiation-free and more operator-dependent, while MPS provides more objective perfusion imaging but involves radiation exposure. In clinical practice, DSE is preferred when functional assessment is needed, whereas MPS is preferred when detailed perfusion evaluation is required.

Imaging Modality	Exercise Stress Testing	Stress Echocardiography	SPECT-MPI	PET-MPI	Coronary CT-angiography	Cardiac MRI
						
Advantages	▪ Cheap ▪ Widely available ▪ No radiation exposure	▪ Widely available ▪ No radiation exposure ▪ Provides structural information ▪ New techniques for viability testing	▪ Widely available ▪ Provides functional information ▪ Can be performed in all patients	▪ High accuracy ▪ Provides functional information ▪ Quantitative information on MBF ▪ Novel techniques for plaque vulnerability	▪ Widely available ▪ Provides anatomical information ▪ High diagnostic performance ▪ Novel techniques for functional information	▪ Highly accurate ▪ No radiation exposure ▪ Provides functional and anatomical information ▪ Quantitative information on MBF ▪ Useful in MINOCA
Disadvantages	▪ Lower sensitivity and specificity ▪ Poorer performance among women relative to men	▪ Lower sensitivity and specificity compared with MRI,CT and PET ▪ Operator variability ▪ Poorer-quality images in larger patients	▪ Lower sensitivity and specificity compared with MRI,CT and PET ▪ Radiation exposure ▪ False-positives from breast attenuation	▪ Limited availability ▪ Radiation exposure ▪ Expensive	▪ Use of contrast may preclude use renal failure ▪ Radiation exposure ▪ Image quality reduced in patients with high heart rate, elevated BMI and dense coronary calcifications	▪ Limited availability ▪ Implanted devices may preclude its use ▪ Gadolinium contrast may limit use in renal failure

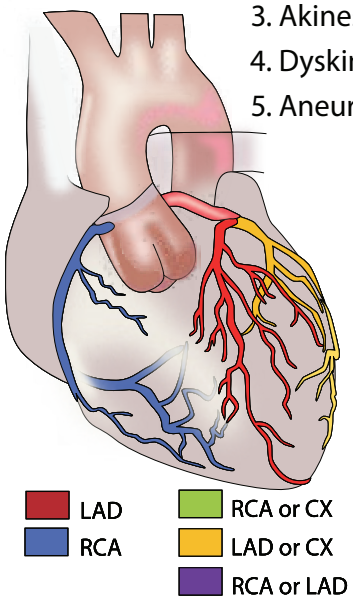
Dobutamine Stress ECHO

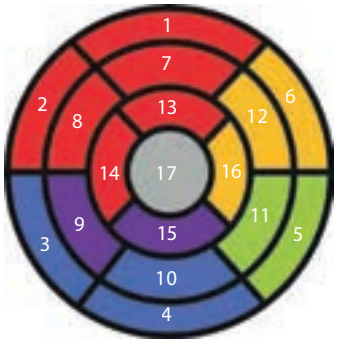


ASSESSMENT OF SYSTOLIC FUNCTION



Scoring:
0: Not visualized
1: Normokinesia
2: Hypokinesia
3. Akinesia
4. Dyskinesia
5. Aneurysmatic





1. basal anterior
2. basal anteroseptal
3. basal inferoseptal
4. basal inferior
5. basal inferolateral
6. basal anterolateral
7. mid anterior
8. mid anteroseptal
9. mid inferoseptal
10. mid inferior
11. mid inferolateral
12. mid anterolateral
13. apical anterior
14. apical septal
15. apical inferior
16. apical lateral
17. apex

Coronary Territory

LAD: Segments 1, 7, 8, 9, 13, 14, 15, 16, 17
RCX: Segments 5, 6, 11, 12
RCA: Segments 2, 3, 4, 10

Dr. Salma Rashdi
Department of Cardiac Imaging
Khairpur SICVD

SUICIDAL LEFT VENTRICLE: A RARE CAUSE OF REFRACTORY HEMODYNAMIC COLLAPSE AFTER CARDIAC SURGERY

CLINICAL SNAPSHOT

A 40-year-old male with advanced aortic valve disease having severe aortic regurgitation and moderate aortic stenosis with normal coronaries underwent surgical replacement with a 19-mm On-X mechanical prosthesis. Intraoperative, the patient was noted to have a heavily calcified aortic root including valve and around left main ostium. Following aortic cross-clamp release, the heart developed ventricular fibrillation necessitating multiple defibrillation attempts despite successful rhythm restoration and unremarkable ST segment changes, the patient remained profoundly Haemodynamically unstable, unresponsive to escalating doses of inotropes and vasopressors (noradrenaline and adrenaline at 0.2 μg/kg/min each with milrinone at 0.4 μg/kg/min). Mechanical support with an intra-aortic balloon pump was initiated along with pump rest despite these measures, the patient continued to demonstrate refractory cardiogenic shock.

TEE showed normal valve with both disc movements and no aortic regurgitation*

No regional wall motion abnormalities; however, there was severe global left ventricular systolic dysfunction.

The patient was in a critical state having high ionotropic support and very low blood pressure in the OR, however, following a bolus of phenylephrine there was a remarkable improvement in his blood pressure.

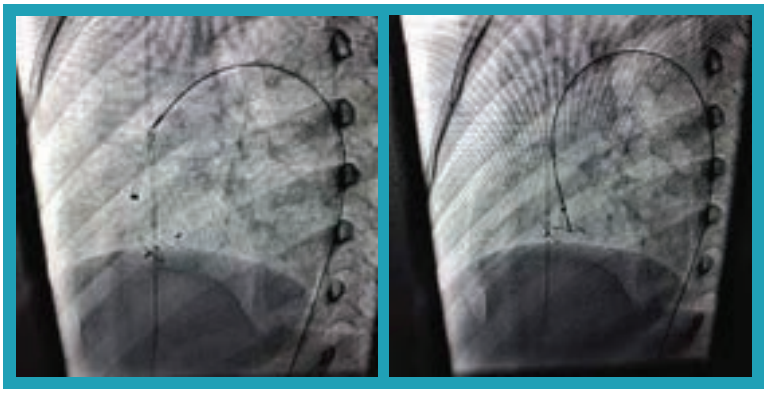
Hence, we kept the patient on 0.5-1.5 microgram /kg/minute of phenylephrine infusion. Soon adrenaline and noradrenaline infusions were reduced without any effect on his blood pressure. He was extubated on his second postoperative day. Later IABP was also removed. We kept him on phenylephrine infusion only as an inotropic support.

He had two echoes post operatively which showed improvement in his LV & RV functions.

The remainder of the hospital course was uneventful allowing for a safe discharge. On follow-up evaluations, he demonstrated full recovery and remained good health reflecting effective and comprehensive management.

Suicidal left ventricle syndrome

“Suicide left ventricle (SLV)” is a term used to describe acute, severe left-ventricular outflow tract (LVOT) obstruction that occurs after relief of chronic high afterload, most commonly:



#post SAVR/TAVR of severe aortic stenosis (rarely aortic regurgitation) #After repair of coarctation of the aorta..

The term “suicide ventricle” refers to the fact that the ventricle can “collapse inward” due to hyper contractility and reduced cavity size.

This typically presents immediately or within hours after surgery and can include:
Sudden low BP
Tachycardia
Signs of cardiogenic shock
New systolic murmur
Echocardiogram showing dynamic LVOT obstruction + **SAM Management principles**

CONCLUSION

The treatment is essentially the reverse of standard heart-failure therapy:

1. **Increase afterload:** Phenylephrine (a pure alpha agonist) is preferred
2. **Reduce LV contractility:** Beta-blockers (e.g., esmolol)
3. **Optimize volume:** Carefully administered IV fluids to increase LV size and reduce obstruction
4. **Avoid drugs that worsen obstruction:** Inotropes
5. **Avoid IABP**

Early recognition is critical as standard shock treatments can make it worse. When treated appropriately, the condition is usually reversible. Although uncommon, it is often overlooked and can be easily missed.

Dr. Asaf Shah
Senior Registrar,
Department of Cardiac Surgery,
SICVD, TMK

INAUGURATION OF CARDIO-OBSTETRICS CLINIC AT SICVD SUKKUR

The Sindh Institute of Cardiovascular Diseases (SICVD) has achieved another important milestone in specialized healthcare with the inauguration of the Cardio-Obstetrics Clinic at SICVD Sukkur.

The clinic was formally inaugurated by Prof. Jawaid Akbar Sial, Executive Director, SICVD, along with senior faculty members. This significant initiative has been launched under the guidance and support of the Honorable Minister for Health, Government of Sindh, Dr. Azra Fazal Pechuho, reflecting the Government of Sindh's continued commitment to strengthening maternal and cardiac healthcare services across the province.

Speaking on the occasion, Dr. Hannah Asghar, Assistant Professor of Preventive Cardiology, NICVD, highlighted the importance of Cardio-Obstetrics care. She emphasized that integrated and coordinated management is essential for improving maternal and fetal outcomes, particularly for pregnant women with existing or potential cardiovascular conditions.

She further noted that the clinic's structured and multidisciplinary approach will support early risk identification, timely intervention, and continuous care throughout all stages of pregnancy. This initiative reinforces SICVD's commitment to preventive, specialized, and patient-centered healthcare services.

Dr. Hannah Asghar
Assistant Professor Preventive Cardiology,

SICVD HONORED WITH 18TH CORPORATE SOCIAL RESPONSIBILITY AWARD 2026

RECOGNIZED FOR ITS OUTSTANDING COMMITMENT TO FREE, ACCESSIBLE, AND LIFE-SAVING CARDIAC CARE ACROSS SINDH

SICVD
SINDH INSTITUTE OF CARDIOVASCULAR DISEASES

FROM KARACHI TO KASHMORE: SERVING THE PEOPLE OF SINDH WITH FREE, LIFE - SAVING CARDIAC AND STROKE CARE.

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