The Review Of
DIABETIC
STUDIES OPEN ACCESS

Nursing Care For Patients With Ischemic Heart Disease

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Abstract:
Nursing care for patients with ischemic heart disease (IHD) constitutes a comprehensive, evidence-based, and patient-centered practice that is critical to optimizing outcomes across the entire disease spectrum, from primary prevention and acute intervention to long-term rehabilitation and secondary prevention. Grounded in a thorough understanding of coronary pathophysiology, nursing interventions are dynamically tailored to the individual's phase of illness, beginning with rapid assessment, symptom management, and facilitation of timely reperfusion during acute coronary syndromes to minimize myocardial damage. Beyond the acute setting, nurses assume a pivotal educational and supportive role, empowering patients through meticulous instruction on medication adherence, risk factor modification, and symptom recognition, which are fundamental to preventing disease progression and recurrent events. Furthermore, by providing holistic psychosocial support, coordinating care transitions, and advocating for participation in structured cardiac rehabilitation, nurses address the multifaceted biopsychosocial needs of patients, thereby enhancing quality of life, promoting self-efficacy, and improving long-term survival within the framework of guideline-directed medical therapy.

Keywords: Nursing Interventions; Ischemic Heart Disease Management; Acute Coronary Syndrome Care; Patient Education; Cardiac Rehabilitation; Risk Factor Modification; Secondary Prevention; Holistic Nursing Care.

Introduction:

Ischemic heart disease (IHD), also termed coronary artery disease (CAD), remains the leading cause of morbidity and mortality on a global scale, presenting a paramount challenge to healthcare systems and societies worldwide. It is a chronic, progressive condition characterized by an imbalance between myocardial oxygen supply and demand, most commonly due to atherosclerotic plaque formation and subsequent narrowing of the coronary arteries. The clinical manifestations of this imbalance span a broad spectrum, from stable, predictable angina pectoris to the acute, life-threatening syndromes of unstable angina, non-ST-elevation myocardial infarction (NSTEMI), and ST-elevation myocardial infarction (STEMI). The profound impact of IHD extends beyond individual physical suffering, incurring immense economic costs related to healthcare expenditure, lost productivity, and long-term disability [1].

The pathophysiological cornerstone of IHD is atherosclerosis, a chronic inflammatory process within the arterial intima. It begins with endothelial dysfunction, an initial injury that impairs the vasodilatory, anti-inflammatory, and anti-thrombotic properties of the endothelium. This dysfunction facilitates the subendothelial accumulation of low-density lipoprotein (LDL) cholesterol, which undergoes oxidation. Oxidized LDL triggers a cascade of inflammatory responses, recruiting monocytes that differentiate into macrophages. These macrophages engulf the oxidized LDL, transforming into lipid-laden foam cells, the primary component of the early atherosclerotic lesion, the fatty streak [2]. Over years or decades, this lesion progresses into a complex plaque consisting of a lipid-rich core covered by a fibrous cap of smooth muscle cells and collagen. The stability of this fibrous cap is critical; a vulnerable, thin-cap fibroatheroma, rich in inflammatory cells and prone to rupture, is the pathological substrate for most acute coronary syndromes (ACS). Plaque rupture or erosion exposes the highly thrombogenic core to the bloodstream, triggering platelet adhesion, activation, aggregation, and fibrin formation, culminating in coronary thrombosis and abrupt vessel occlusion or critical stenosis [3].

The clinical consequences of this occlusion are dictated by its degree, duration, and location. Transient, partial occlusion may manifest as unstable angina—chest pain at rest or with minimal exertion, signifying a critically narrowed vessel or microembolization. A more sustained, partial occlusion leading to significant myocardial necrosis without complete transmural involvement results in an NSTEMI. The most catastrophic event, STEMI, occurs with complete and persistent occlusion of a major epicardial coronary artery, leading to transmural ischemia and necrosis of the myocardium supplied by that vessel. The extent of infarction directly influences the immediate complications, such as arrhythmias, cardiogenic shock, and pump failure, as well as long-term sequelae like heart failure [4]. Beyond the acute thrombotic event, chronic progressive stenosis due to plaque growth leads to stable angina, where myocardial oxygen demand during physical or emotional stress exceeds the limited supply available through the narrowed artery.

Understanding this pathophysiology is not an academic exercise for the cardiac nurse; it is the essential framework that informs every aspect of clinical assessment, decision-making, and intervention. It explains the rationale for pharmacological therapies like antiplatelets, statins, and beta-blockers. It underscores the urgency behind reperfusion strategies in STEMI. It highlights the importance of targeting endothelial function and inflammation in long-term management. Therefore, nursing care for the patient with IHD is fundamentally built upon a deep comprehension of these underlying mechanisms, allowing for anticipatory guidance, targeted patient education, and vigilant monitoring for both acute and chronic complications [5].

The evolution of nursing in cardiology mirrors the advancements in medical science. The role has expanded from one of primarily providing comfort and basic monitoring to that of a sophisticated clinician, educator, advocate, and care coordinator. Modern cardiac nurses perform complex assessments, titrate potent intravenous medications, manage advanced technology like intra-aortic balloon pumps or ventricular assist devices, provide crucial psycho-emotional support, and lead patient education initiatives. They are integral members of multidisciplinary teams in coronary care units (CCU), cardiac catheterization laboratories, and cardiac rehabilitation programs. Their continuous presence at the bedside positions them uniquely to detect subtle changes in a patient's condition, interpret signs of clinical deterioration, and implement timely interventions, thereby directly impacting mortality and morbidity [6].

Furthermore, nursing practice in IHD is deeply rooted in evidence-based guidelines established by major cardiovascular societies. These guidelines provide a structured approach to risk assessment, pharmacological management, reperfusion therapy timelines, and secondary prevention strategies. The nurse serves as both an implementer and an interpreter of these guidelines, ensuring that care is standardized, timely, and effective. For instance, the door-to-balloon time in STEMI, a critical performance measure, relies heavily on efficient, protocol-driven nursing actions from emergency department triage to catheterization lab preparation [7]. Similarly, the initiation of guideline-directed medical therapy (GDMT)—dual antiplatelet therapy, high-intensity statins, beta-blockers, and angiotensin-converting

enzyme inhibitors—often falls to the nurse for administration, monitoring for side effects, and reinforcing adherence education before discharge [8].

Comprehensive Nursing Assessment: The Bedrock of Individualized Care

The nursing process for patients with IHD begins with a meticulous and holistic assessment, which forms the foundation for diagnosis, planning, and intervention. This assessment is continuous, dynamic, and multi-dimensional, encompassing physiological, psychological, and social domains to create a complete portrait of the patient's health status and needs.

History Taking and Symptom Analysis: A detailed, targeted history is the single most important diagnostic tool. The nurse must expertly elicit the characteristics of chest pain or its equivalent (e.g., dyspnea, fatigue, epigastric discomfort). This involves assessing the Onset, Location, Intensity, Duration, and Aggravating/Alleviating factors (OLIDA). For example, stable angina is typically predictable, substernal, pressure-like, lasts 2-10 minutes, and is relieved by rest or nitroglycerin. In contrast, pain from an acute MI is often more severe, prolonged (>20 minutes), unrelieved by rest or nitroglycerin, and may be associated with diaphoresis, nausea, or a sense of impending doom [9]. Nurses must be particularly astute in recognizing atypical presentations, which are common in women, the elderly, and diabetics, who may present primarily with dyspnea, extreme fatigue, or confusion without classic chest pain [10]. A thorough review of cardiovascular risk factors—hypertension, dyslipidemia, diabetes, smoking history, family history of premature CAD, obesity, and sedentary lifestyle—is crucial for risk stratification and guiding long-term preventive strategies. A comprehensive medication and social history, including alcohol use and psychosocial stressors, completes the clinical picture.

Physical Examination: The physical exam provides objective data to corroborate the history and identify signs of complications. A systematic approach is vital. Vital signs are assessed frequently; tachycardia and hypertension may indicate pain or anxiety, while bradycardia and hypotension can signal vagal stimulation or cardiogenic shock. Inspection may reveal pallor, diaphoresis, or signs of respiratory distress. Palpation assesses peripheral pulses, checks for heaves or thrills, and identifies areas of tenderness. Auscultation of the heart is critical: a fourth heart sound (S4) is common in ischemic, non-compliant ventricles; a third heart sound (S3) may indicate early heart failure; and a new murmur of mitral regurgitation could suggest papillary muscle dysfunction due to ischemia [11]. Lung auscultation for crackles (rales) assesses for pulmonary edema, a sign of left ventricular failure. Examination of the jugular venous pressure (JVP) and peripheral edema provides information about right-sided heart filling pressures and potential heart failure.

Diagnostic Data Interpretation: Nurses must proficiently interpret key diagnostic tests. The 12-lead Electrocardiogram (ECG) is the immediate diagnostic test for ACS. Nurses must recognize STEMI patterns (ST-segment elevation in contiguous leads), signs of ischemia (ST-segment depression, T-wave inversion), and other significant abnormalities like heart blocks or arrhythmias [12]. Continuous cardiac monitoring is essential for detecting lethal arrhythmias such as ventricular tachycardia or fibrillation. Understanding serum cardiac biomarkers—troponin I or T, CK-MB—is crucial; their rise and fall pattern confirms myocardial necrosis and helps differentiate between unstable angina and NSTEMI/STEMI. Nurses coordinate timely blood draws and understand the implications of the results. They also review other relevant labs: lipid profile, blood glucose, electrolytes, and complete blood count. Furthermore, they prepare patients for and provide education about advanced diagnostics like echocardiography (to assess wall motion abnormalities and ejection fraction) and coronary angiography (the gold standard for defining coronary anatomy) [13].

Psychosocial and Lifestyle Assessment: Beyond the physical, a comprehensive assessment explores the patient's emotional state, coping mechanisms, knowledge level, support system, and lifestyle behaviors. Acute cardiac events are profoundly frightening, often triggering anxiety, denial, and depression. Nurses

assess for these using both observation and direct questioning. Understanding a patient's health literacy, cultural beliefs about illness, occupation, financial resources, and social support network (family, friends) is essential for developing a realistic, patient-centered plan of care and effective discharge planning [14]. This holistic assessment ensures that nursing interventions address not just the diseased heart, but the person living with the disease.

Nursing Interventions in the Acute Phase: Stabilization, Reperfusion, and Complication Management

The acute phase, particularly during an ACS event, demands swift, precise, and protocol-driven nursing interventions aimed at reducing myocardial oxygen demand, increasing supply, achieving timely reperfusion, and preventing or managing life-threatening complications.

Immediate Stabilization and MONA Protocol: Upon presentation, initial nursing priorities focus on stabilizing the patient. The mnemonic MONA (Morphine, Oxygen, Nitrates, Aspirin) outlines core initial therapies, though contemporary guidelines have refined their application. Oxygen is administered via nasal cannula to maintain SpO2 >90%, as unnecessary high-flow oxygen may cause vasoconstriction [15]. Sublingual nitroglycerin is given to relieve pain by vasodilation, reducing preload and afterload, but is withheld in cases of hypotension or right ventricular infarction. Aspirin (162-325 mg chewed) is administered immediately for its potent antiplatelet effect, unless contraindicated. Morphine (or another opioid) is used for pain and anxiety relief if symptoms are not quickly relieved by nitrates, as effective analgesia reduces catecholamine surge and myocardial oxygen demand. Simultaneously, nurses establish IV access, begin continuous ECG monitoring, and obtain a 12-lead ECG within 10 minutes of arrival.

Facilitating Reperfusion Therapy: For patients with STEMI, time is muscle. The nurse plays a critical role in minimizing door-to-reperfusion time. This involves rapid identification, immediate activation of the catheterization lab team, and efficient preparation for primary percutaneous coronary intervention (PCI), the preferred reperfusion strategy. Nursing responsibilities include verifying informed consent, administering a loading dose of a second antiplatelet agent (e.g., P2Y12 inhibitor like clopidogrel, prasugrel, or ticagrelor), preparing the groin or radial access site, and ensuring safe transport to the cath lab [7]. In facilities without PCI capability, nurses prepare the patient for immediate transfer or initiate fibrinolytic therapy if transfer delays are anticipated. They are responsible for the safe administration of thrombolytics, vigilant monitoring for reperfusion arrhythmias and signs of bleeding complications, and ongoing assessment for pain resolution and ST-segment resolution on ECG.

Pharmacological Management and Nursing Vigilance: Beyond MONA, nurses administer and titrate a suite of guideline-directed medications. Dual antiplatelet therapy (DAPT) is maintained, with careful monitoring for signs of bleeding (e.g., gingival, gastrointestinal, intracranial). Beta-blockers (e.g., metoprolol) are initiated to reduce heart rate, blood pressure, and contractility, thereby lowering myocardial oxygen demand. Nurses monitor for bradycardia, hypotension, and signs of heart failure exacerbation. High-intensity statins (e.g., atorvastatin) are started early for their plaque-stabilizing and anti-inflammatory effects, in addition to lipid-lowering. Angiotensin-Converting Enzyme Inhibitors (ACE-I) or Angiotensin Receptor Blockers (ARBs) are added within 24 hours for patients with reduced ejection fraction, anterior infarction, or hypertension, with nursing assessment for hypotension, cough (with ACE-I), and renal function [16]. For patients with ongoing ischemia or heart failure, anticoagulants (e.g., unfractionated heparin, enoxaparin) are infused, requiring meticulous monitoring of activated partial thromboplastin time (aPTT) or anti-Xa levels.

Monitoring for and Managing Complications: The nurse is the first line of defense in detecting complications. Arrhythmias are common; ventricular fibrillation requires immediate defibrillation, while bradycardias may require atropine or temporary pacing. Nurses must be proficient in advanced cardiac life

support (ACLS). Heart failure is assessed through daily weights, strict intake and output measurement, lung auscultation, and monitoring for dyspnea. Nurses administer diuretics as prescribed and implement fluid restriction strategies. Cardiogenic shock, the most severe form of pump failure, requires aggressive hemodynamic monitoring (often with an arterial line and pulmonary artery catheter), inotropic support (e.g., dobutamine), and possibly mechanical circulatory support like an intra-aortic balloon pump (IABP). The nurse manages these complex devices, ensures sterile line care, and monitors for vascular complications [17]. Mechanical complications like ventricular septal rupture or papillary muscle rupture, though rare, present with sudden hemodynamic deterioration and new murmurs, requiring immediate surgical consultation.

Nursing Roles in Diagnostic and Therapeutic Procedures

Nurses are integral to the safety and success of both diagnostic and interventional cardiac procedures, providing pre-procedure preparation, intra-procedure assistance, and post-procedure recovery and monitoring.

Pre-Procedure Care: For procedures like coronary angiography or elective PCI, nursing responsibilities include comprehensive patient education to alleviate anxiety and ensure informed consent. This involves explaining the purpose, benefits, risks, and steps of the procedure in understandable language. Nurses verify NPO status, perform skin preparation at the intended access site (radial or femoral), assess and mark peripheral pulses, review allergies (particularly to iodine contrast), and ensure baseline lab values (especially renal function and coagulation studies) are available. They administer pre-procedure medications as ordered, such as anti-anxiety agents or additional antiplatelet loading doses [18].

Intra-Procedure Assistance: In the catheterization laboratory, nurses may function in circulator or monitor roles. They assist with patient positioning, maintain sterile technique, prepare and handle equipment and medications (including contrast media), and continuously monitor the patient's vital signs, ECG, oxygen saturation, and comfort level. They are prepared to manage acute reactions, such as contrast-induced allergic responses or vasovagal episodes, and to assist the physician with emergency interventions if needed.

Post-Procedure Care and Monitoring: Post-procedure recovery is a critical nursing domain. For transradial access, now the preferred approach, care involves frequent assessment of the radial pulse, monitoring the access site for hematoma or bleeding, and ensuring the patent hemostasis device is properly applied and later removed. For transfemoral access, nursing care is more intensive: the patient must remain on strict bed rest with the leg immobilized for several hours to prevent bleeding and vascular complications. Nurses perform neurovascular checks (assessing pulse, color, temperature, sensation, and movement) of the affected limb every 15-30 minutes initially. They vigilantly monitor the groin site for hematoma formation, pseudoaneurysm, or retroperitoneal bleeding, signs of which may include hypotension, tachycardia, back or flank pain, and a falling hematocrit [19]. They also monitor for contrast-induced nephropathy, encouraging oral hydration (if permitted) and monitoring renal function. Pain management at the access site and patient education regarding post-discharge activity restrictions are also key nursing functions.

Patient and Family Education: Empowering Self-Management

Education is a fundamental and ongoing nursing intervention that empowers patients and their families to actively participate in care, manage their condition, and prevent future cardiac events. Effective education is tailored, iterative, and utilizes teach-back methods to confirm understanding.

Medication Adherence and Management: Nurses provide detailed, clear instruction on all prescribed medications, emphasizing their purpose, dosing schedule, potential side effects, and the critical importance of adherence, especially with DAPT. For example, patients must understand that stopping antiplatelet

therapy prematurely drastically increases the risk of stent thrombosis. Education includes practical strategies for incorporating medications into daily routines and what to do if a dose is missed [20].

Symptom Recognition and Action Plan: Patients must be able to differentiate between stable angina and symptoms of a new ACS. Nurses teach them to recognize worsening or new-onset chest pain, dyspnea, palpitations, or unusual fatigue. A clear, written action plan is developed, instructing the patient to stop activity, take prescribed nitroglycerin (up to three doses, 5 minutes apart), and call emergency services immediately if symptoms are unrelieved or worsening after the first dose. This reduces dangerous delays in seeking care [21].

Cardiac Risk Factor Modification: This is the cornerstone of secondary prevention. Nurses provide counseling and goal-setting support for:

- **Smoking Cessation:** Offering resources, referrals to cessation programs, and pharmacotherapy options [22].
- **Dietary Modification:** Advising on a heart-healthy diet (e.g., Mediterranean or DASH diet), low in saturated/trans fats, cholesterol, and sodium, and rich in fruits, vegetables, whole grains, and lean proteins. Referral to a dietitian is often beneficial [23].
- **Physical Activity:** Providing guidance on a gradual, physician-approved exercise program, starting with walking and incorporating both aerobic and resistance training as tolerated [24].
- **Weight Management:** Assisting with setting realistic weight loss goals.
- **Stress Management:** Teaching techniques such as deep breathing, meditation, or mindfulness, and discussing the impact of stress on the cardiovascular system [25].

Psychosocial Support and Mental Health Screening: Recovery is as much psychological as physical. Nurses screen for anxiety and depression using validated tools, as these conditions are highly prevalent post-MI and are associated with poorer outcomes. They provide emotional support, normalize feelings of fear and frustration, and facilitate referrals to mental health professionals or cardiac support groups as needed. Involving family in education and support planning strengthens the patient's home environment [26].

Transition to Home and Long-Term Management: The Role of Cardiac Rehabilitation

The discharge process is a vulnerable transition. Comprehensive discharge planning, led by the nurse, ensures continuity of care and sets the stage for successful long-term management.

Structured Discharge Planning: This involves reconciling medications, providing a detailed written discharge summary, scheduling timely follow-up appointments with cardiologists and primary care physicians, and ensuring the patient has all necessary prescriptions and equipment. Nurses assess the home environment for potential barriers to recovery and arrange for home health services if needed [27].

Cardiac Rehabilitation (CR) Referral and Advocacy: CR is a Class I recommendation for all patients following ACS, PCI, or coronary artery bypass surgery. Nurses are responsible for ensuring automatic referral to a Phase II outpatient CR program. CR is a comprehensive, supervised program involving structured exercise training, intensive education on heart-healthy living, and psychological counseling. Nurses educate patients on the proven benefits of CR, including reduced mortality, improved functional capacity, enhanced quality of life, and better adherence to secondary prevention measures [28]. They play a key role in motivating patients to enroll and complete the program.

Long-Term Follow-Up and Monitoring: Nurses in outpatient settings (clinics, primary care) continue the work of long-term management. They monitor for medication side effects, assess progress on lifestyle goals, reinforce education, and screen for the development of complications such as heart failure or

recurrent angina. They serve as a consistent point of contact and advocacy, helping patients navigate the healthcare system over the long course of their chronic condition [29].

Special Populations and Considerations in IHD Care

Nursing care must be adapted to meet the unique needs of specific patient populations, as their presentation, response to treatment, and psychosocial needs can differ significantly.

Women with Ischemic Heart Disease: Women often present later, with more atypical symptoms (e.g., fatigue, indigestion, jaw pain) and are more likely to have non-obstructive CAD or microvascular dysfunction. They have higher short-term mortality after MI, partly due to treatment delays and underutilization of evidence-based therapies. Nurses must be aware of these differences to avoid underestimating symptoms in women. Education and advocacy must be tailored to address these disparities [30].

Elderly Patients: The elderly have a higher prevalence of comorbidities (e.g., renal insufficiency, diabetes), polypharmacy, and frailty. They are more susceptible to complications like bleeding from antithrombotic therapy and contrast-induced nephropathy. Nursing assessments must be comprehensive, considering functional status, cognitive function, and social support. Care plans must balance aggressive therapy with the risks of interventions, often requiring nuanced clinical judgment and closer monitoring [31].

Diabetic Patients: Diabetes accelerates atherosclerosis and is considered a CAD risk equivalent. Diabetic patients frequently have autonomic neuropathy, leading to silent ischemia (painless MI), which delays presentation. Nurses must emphasize stringent glycemic control as part of cardiovascular risk reduction and maintain a high index of suspicion for cardiac events even in the absence of classic pain [32].

Nursing Management of Coexisting Conditions and Emergencies

Patients with IHD frequently have comorbid conditions that complicate management, and nurses must be adept at integrating care for these concurrent issues.

IHD and Heart Failure: Many patients develop heart failure with reduced ejection fraction (HFrEF) as a consequence of myocardial infarction. Nursing management integrates GDMT for both conditions (beta-blockers, ACE-I/ARB/ARNI, MRA, SGLT2 inhibitors). Key nursing responsibilities include daily weight monitoring, strict fluid management, diuretic administration, patient education on sodium restriction, and vigilant assessment for signs of fluid overload (e.g., worsening dyspnea, orthopnea, edema) [33].

IHD and Atrial Fibrillation (AF): The coexistence of IHD and AF presents a major challenge regarding anticoagulation (to prevent stroke in AF) and antiplatelet therapy (to prevent stent thrombosis or recurrent MI). The use of triple therapy (DAPT + an oral anticoagulant) significantly increases bleeding risk. Nurses play a crucial role in monitoring for bleeding, educating patients on bleeding precautions, and ensuring adherence to a carefully balanced and often time-limited regimen as determined by the cardiologist [34].

Cardiac Arrest and Post-Cardiac Arrest Care: In the event of an in-hospital cardiac arrest due to IHD (e.g., VF/VT), nurses are first responders, initiating high-quality CPR and defibrillation per ACLS protocols. Following return of spontaneous circulation (ROSC), nursing care enters a critical phase of post-cardiac arrest syndrome management. This involves targeted temperature management (therapeutic hypothermia or normothermia) to improve neurological outcomes, meticulous hemodynamic support to prevent secondary brain injury, continuous neurological assessment, and management of the precipitating cardiac cause (e.g., urgent coronary angiography if STEMI is suspected) [35].

Advanced Therapies and End-Stage Care

For patients with advanced, refractory IHD and heart failure, nursing care extends to supporting advanced therapeutic options and, when appropriate, palliative approaches.

Mechanical Circulatory Support (MCS): For patients in profound cardiogenic shock or with end-stage heart failure, temporary or durable MCS may be employed. Nurses may care for patients with intra-aortic balloon pumps (IABP), Impella devices, or extracorporeal membrane oxygenation (ECMO). This requires specialized training in device operation, troubleshooting alarms, maintaining anticoagulation, preventing infections, and providing profound psychological support to both patient and family during this critical period [36].

Palliative and End-of-Life Care in Advanced IHD: Not all patients are candidates for or desire aggressive interventions. For those with refractory symptoms and poor quality of life despite optimal medical therapy, a palliative care approach is essential. Nurses are pivotal in facilitating discussions about goals of care, managing debilitating symptoms like chronic angina or dyspnea, and providing compassionate end-of-life care. This involves expert pain and symptom management, psychosocial and spiritual support for the patient and family, and ensuring care aligns with the patient's values and wishes [37].

Quality Improvement, Evidence-Based Practice, and the Nurse's Role

The field of cardiology is rapidly evolving, and nursing practice must keep pace through a commitment to quality improvement (QI) and evidence-based practice (EBP).

Adherence to Clinical Guidelines and Protocols: Nurses ensure that institutional protocols for ACS management (e.g., door-to-balloon time, initiation of GDMT) are followed consistently. They participate in collecting and reviewing performance data for these key metrics [38].

Patient Safety Initiatives: Nurses are at the forefront of preventing hospital-acquired conditions in cardiac patients. This includes initiatives to reduce hospital-acquired infections (central line-associated bloodstream infections, catheter-associated urinary tract infections) through strict adherence to sterile technique and bundle care, and preventing venous thromboembolism (VTE) in immobilized patients through the use of mechanical and pharmacological prophylaxis [39].

Research and Evidence-Based Practice: Nurses contribute to the evidence base by participating in clinical research trials. They implement findings from high-quality research into daily practice, such as adopting new protocols for radial artery access recovery or integrating novel patient education tools. By questioning existing practices and seeking out the best evidence, nurses drive continuous improvement in the quality and safety of IHD care [40].

Conclusion:

Nursing care for patients with ischemic heart disease is a complex, sophisticated, and indispensable component of modern cardiovascular medicine. It is a practice built on a deep understanding of pathophysiology, guided by rigorous evidence, and executed through a synthesis of advanced technical skill, critical thinking, and compassionate human connection. From the moment of acute presentation through lifelong management, nurses act as clinicians, educators, advocates, coordinators, and supporters. They are the constant in a patient's journey, translating complex medical regimens into understandable actions, detecting subtle signs of deterioration, empowering self-care, and improving both survival and quality of life. As the epidemic of cardiovascular disease continues to evolve, the role of the cardiac nurse will undoubtedly expand and adapt, remaining central to the mission of reducing the burden of ischemic heart disease on individuals and societies worldwide

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